THE LANCET.

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The Harveian Oration

ON

ADVANCES IN KNOWLEDGE REGARDING THE CIRCULATION AND ATTRIBUTES OF THE BLOOD SINCE HARVEY'S TIME.

"FOR THE LIFE OF ALL FLESH IS THE BLOOD THEREOF."

Delivered before the Royal College of Physicians of London on Oct. 19th, 1914,

BY SIR RICHARD DOUGLAS POWELL, BART., K.C.V.O., M.D., F.R.C.P., LL.D.,

PHYSICIAN IN ORDINARY TO THE KING; CONSULTING PHYSICIAN TO THE MIDDLESEX HOSPITAL AND THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, ETC.

(*Concluded from p. 984.*)

ATTRIBUTES OF THE BLOOD.

Harvey's life work was the demonstration of the circulation of the blood. He could speak and speculate only generally as to the composition of the blood itself. He recognises the blood as the medium in which "the life" dwells, as "the generative part, the foundation of life, the first to live, the last to die, and the primary seat of the soul" (or vital principle). He goes beyond Aristotle, whom he quotes as saying that "the blood is that alone which lives and is possessed of heat whilst life continues," and lays emphasis upon the fact that it "is the prime part that is engendered and the heart the mere organ destined for its circulation." He holds it also as primary to the vessels which are constructed to contain it. Harvey's views were thus, as we should expect, thoroughly sound so far as they could go, and, as we may see, he makes some shrewd speculations and divinations on the more subtle functions of the blood which could not be plain to him. I will endeavour very briefly to refer to the cardinal discoveries respecting the blood which have come to light since Harvey's time. Within half a century the red corpuscles were recognised and described by Malpighi, followed in more detail by Leeuenhoek.

OXYGENATION.

In 1668, three centuries after saltpetre had been utilised in explosive combination for the destruction of human life, Mayow recognised "nitre air" as the essential agent of slower combustion, and its activity in respiration and other processes in the body. "The function of breathing," says Mayow, "is merely to bring air in contact with the blood to which it gives up its nitro-aerian constituent and from which it carries off the vapours produced by the heating of the blood." Again, "The blood carries the nitro-aerian constituents to the muscles (including the heart), and their motion results from the chemical reaction in the muscle with the combustible matter contained therein." The view thus expressed by Mayow nearly two and a half centuries ago may be said to epitomise what we now know of the oxidation side of the respiratory function, and was further confirmed by Boyle in 1670, who demonstrated that the presence of air was necessary for the existence of both land animals and water animals. Although the existence of oxygen was thus predicated by Mayow and Boyle, and especially by Mayow, as necessary to life, it was not actually isolated until a century later by Priestley (1774).

The fact that oxygen forms a loose but definite combination with the hæmoglobin of the red corpuscles, and the further important fact that carbon monoxide has a preferential attraction for the hæmoglobin, and forms a more stable combination with it, are discoveries of great importance in elucidating the processes of respiration both in the lungs and in the tissues, especially the muscular tissues.

The most recent observations of Haldane and Priestley, Loewy, Zuntz, and others upon the composition of alveolar air and of venous blood, especially as regards oxygen and carbon dioxide, bring the matter up to date, showing: (1) that whilst normal arterial blood as it flows away from the lungs is within 1 volume per cent. of being completely saturated with oxygen (19 c.c. oxygen to 100 c.c. of blood); (2) after passing through the systemic capillaries the oxygen is reduced to 12 volumes per cent. (3) In venous blood the tension or pressure of the two gases O and CO_2 has been estimated by Loewy and von Schrötter as 5·3 per cent. of an atmosphere (37·6 mm. Hg) for oxygen and 6 per cent. (42·6 mm.) for CO_2 respectively. In arterial blood the tension of oxygen is about 100 mm. Hg (or 15 per cent. of an atmosphere) (Howell), that of CO_2 5 per cent. of an atmosphere (35 mm. Hg.) (4) In the tissues the relative tension of oxygen and CO_2 is for oxygen *nil*, for CO_2 50 to 70 mm. Hg. (5) The oxygen is so loosely combined as oxyhæmoglobin and so readily displaced by CO_2 that practically these gases follow the law of diffusion through membranes.

It thus becomes evident that, coincidently with the circulation of the blood, there is a respiratory circuit in lungs and tissues of the gases it contains, oxygen entering the blood at the lungs and permeating the capillaries into the tissues; CO_2 entering the blood at the tissues and permeating the pulmonary capillaries of the alveoli. The respiratory process commences in the lungs and is completed in the tissues, the remnant of oxygen returning with the venous blood being replenished in the lungs, and the carbonic acid accumulated from tissue changes escaping through the lungs to gather again as the blood reaches the tissues through the systemic capillaries, the whole function being under the watchful regulation of the medullary nerve centre. The picture only differs in its more exact detail from that so ably sketched by Mayow 250 years ago.

The presence of oxygen and nitrogen in the blood plasma is but of slight collateral importance except in morbid conditions such as those found in caisson disease both in compression and decompression.

COAGULATION.

The coagulation of the blood was a phenomenon familiar to physicians from all time, and innumerable observations were made on the characters of the clot resulting from venesection and what they might portend. In alluding to the phenomena observed we must bear in mind that all the earlier and much of the later observations relate to inanimate or shed blood, or *gore*, as Harvey brusquely speaks of it.

In 1770 William Hewson, a junior contemporary and for a time a co-lecturer with William and John Hunter, made some remarkable observations on the coagulation of the blood, recognising that it was due to changes in the plasma, was prevented by some action of the vessel wall, and that outside the body it was also prevented by the presence of a

neutral salt (sulphate of soda). It was Schmidt, however, who in 1861 laid the foundation of the modern theories of coagulation by isolating fibrinogen and by the discovery of the fibrin "ferment" to which the name of thrombin was afterwards applied. Hammarsten confirmed and extended his observations, which were importantly added to by the discovery by Arthus and Pages that calcium salts played an important part in the coagulating process.

Thrombin is not naturally present in the blood, but is evoked by the action of calcium salts upon an inactive precursor called prothrombin or thrombogen. Whether thrombogen exists naturally in the blood is also questioned. The theory of coagulation accepted by Professor Halliburton is that thrombogen is a substance existing in the blood plasma which in association with an activating agent called thrombokinase (which does not pre-exist but is derived from the platelets, red corpuscles, and tissue elements) and in the presence of calcium salts is converted into the active enzyme or ferment. The thrombin thus produced reacts upon a protein substance, fibrinogen, which is present normally in the blood plasma and transforms it into the insoluble, stringy material, fibrin, which entangles the other elements of the blood to produce a clot. It is assumed that for the production of thrombokinase some disintegration of the platelets is necessary, or that it is washed in the flow of blood from the tissues. These observations, complex as they are and by no means as yet fully accepted, apply, let me repeat, to inanimate blood after it has left the vessels. They also apply with some reservations to the formation of post-mortem clots in the heart and great vessels.

It was observed by Wooldridge in 1886 that thrombin as prepared by Schmidt when introduced intravenously does not produce coagulation. This little difficulty has, however, been met by the supposition that the thrombin is neutralised by an antithrombin circulating in the blood. The nucleoproteins of tissue extracts which coagulate the living blood are supposed to do so by the thrombokinase they contain, but Wooldridge has shown that a larger quantity of the same extracts causes the blood to become less coagulable.

Intravascular Thrombosis.

The coagulation of living blood to form a thrombus in a vessel is a somewhat different process of which the formation of fibrin is a comparatively late phase. An accumulation and adhesion of platelets seems to be the first thing that happens at a portion of an artery or vein which from injury or disease, usually of an infective nature, excites the coagulation. Almost immediately leucocytes collect in the mass followed by fibrinous formation which penetrates the whole, entangling red corpuscles and other elements of the blood. Whether this formation of fibrin is the result of the reaction of platelets or white cell secretion upon fibrinogen does not seem to be settled, but both appear probable. More purely fibrinous clotting of the blood may be observed within the vessels over roughened surfaces and inflammatory areas. Pure leucocytes may collect to block small vessels. Again, under certain toxic conditions the red corpuscles may adhere to form thrombi, occluding small vessels.

The mode of extension, absorption and organisation of thrombi has been fully established. The initial reason for the occurrence of a thrombus is much more obscure. It would seem that slowing of the current of the blood tends to the accumulation of platelets which normally occupy the centre of the current to the sides in the outer and comparatively still zone of the stream, and the same is known to hold with regard to the white cells. It still requires a broken or a diseased inflammatory or degenerated surface of the vessel to attract the accumulation of platelets and corpuscles, and the ultimate formation of fibrin to form the thrombus. The so-called inflammatory thrombi, whether originating in phlebitis or arteritis, are now recognised as of infective origin, associated with such diseases as rheumatic fever, influenza, enteric fever, and the like.

It would thus appear that intravascular thrombosis is a vital and not a chemical or fermentative process such as obtains in inanimate blood. It is more like the reaction of a tissue to heal a breach of surface. The thrombokinase reaction resulting in thrombosis and the formation of fibrinous layers and reticula are secondary occurrences, although of great importance in building and consolidating the thrombotic mass. In due time the thrombus degenerates, is absorbed, or rather consumed in its effete parts by phagocytic action, whilst from the vessel side it is becoming organised by the penetration of new vessels. Like many vital attempts at repair, the process has its inconveniences and dangers, but in the closing of severed or ligatured vessels and the occlusion and consolidation of aneurysms we find its value, whilst the immediate isolation of a morbid spot in the vessel by the formation of a protective clot must be of importance in preventing general blood contamination.

In septic thrombi a new element is introduced which need not be discussed here. Given a breach of surface—e.g., a degenerated aorta or cardiac valve—and the presence in the blood of bacterial organisms derived from infected surfaces—colon, bladder, gums—or absorption from without, and there is now no mystery to be explained in the occurrence of infective thrombosis from the lodgment of such organisms on unprotected surfaces.[1]

Dr. Senhouse Kirkes[2] first drew attention in 1852 to embolism or blocking of the vessels from fibrinous clots conveyed from the right or left cavities of the heart to the lungs and systemic organs respectively. And further developments of the observations have been far-reaching in pathology and clinical medicine.

COÖRDINATIVE ATTRIBUTES OF THE BLOOD.

In the fertilised protoplasm in which animal life has its beginnings there is a coördination of the formative, digestive, circulatory, and sentient functions under the ægis of nervous activation—if I may apply so modern a term to so old a service—that maintains the autonomous individuality of the organism. This coördination of process is sometimes spoken of as a species of chemiotaxis, using the term in its widest sense. In the course of evolution and in that brief epitome of it that proceeds *in utero* in the more advanced types of animal life separate organs representing each function are gradually differentiated. The same correlation of function, however, must still be maintained, and the *consensus partium*, as it has happily been expressed, by which this correlation is preserved under conditions of greater elaboration is

[1] Professor Welch's account of Thrombosis in Vol. VI. of Allbutt and Rolleston's System of Medicine is the most lucid and comprehensive, and although five years old, as yet, I believe, requires no material modification.

[2] Transactions of the Royal Medical and Chirurgical Society, vol. xxxv.

effected through the medium of the circulation by means inconceivable at the time of its great discoverer, but still, as in the primitive plan, under the control of the nervous system. The principle of every cell being an individual organism was instilled into my mind in my earliest student days by a remarkable man, Professor Grant, of University College, who held the chair of comparative anatomy in the middle third of the last century. In 1846 Wharton Jones, another pioneer of blood biology now forgotten, had discovered the amœboid movements of the white cells in fishes, and Davine soon afterwards found the same in human blood.

Many years before the doctrines of cellular pathology of Virchow, of the wandering cells of Cohnheim and their phagocytic function as discovered by Metchnikoff were under discussion, Professor Grant thus interested the young minds of the few who would attend his class in the cells of the blood. He pointed out that they were, as the other cells of the body, living entities, carried here and there in the highways and byways of the liquid tissue of which they formed a part; that each cell earned its own livelihood within the limits of its environment, absorbing its own nourishment and secreting its own products; and that, moreover, these cells were, like Autolycus, "snappers up of unconsidered trifles," such as may be effete and strange in the vital stream—flotsam and jetsam of the tissues, or foreign bodies introduced from without.

These two conceptions—(1) that the blood is a liquid tissue the formed elements of which have their own autonomous vitality, and (2) that it is the chief means by which the *consensus partium*, so simple in the protoplasmic organism, is maintained in all the future complex developments of that organism—may be regarded as the main principles which underlay all the discoveries established by the brilliant researches of modern observers in the vital chemistry and biology of the blood. *Phagocytosis* is perhaps the factor around which the processes illustrative of the first principle centre; *internal* secretion that by which the second principle is best illustrated.

I can do little more than enumerate these discoveries. I cannot even name—except here and there—the workers who have brought them about; they are all well known and for the most part still living amongst us, many of them Fellows of this College, still searching out the secrets of nature by way of experiment in the topmost branches of the tree of knowledge rooted in Harvey's discovery. Some have suffered, but, like Harvey, have outlived the obloquy cast at them by ignorance and slander.

CHEMICAL ATTRIBUTES OF THE BLOOD.

The structure and function of the blood is a subject too vast to be touched upon save in a very elementary manner. It is a tissue of which the cellular elements, as with other tissues, are beings with their appetites and antipathies, earning their living "on their own" in their plasmic environment; the difference being that the environment of the blood cells is liquid, a vital, an ever-flowing stream, whilst the cells of the fixed tissues are dependent upon such portions of the plasma as are conveyed to them by the vessels of their connecting framework.

The blood thus contributes to and partakes of all organic function, and in the composition of its plasma there have been recognised, identified, and isolated—(1) substances called proteins destined for the body nutrition; (2) products of metabolism *en route* for removal; (3) salts which attend and facilitate both processes; and (4) certain other substances, neutral bodies, ferments, opsonins, antibodies, too numerous to speak of individually, some of which, as fibrinogen, can be identified and isolated; others—the opsonins, the antibodies, and some of the ferments—are discoverable only by their effects, some of them somewhat suppositious, like the meat-roasting quality in a jack, humorously alluded to by our quondam Fellow, Arbuthnot, in his amusing skit on the learned disquisitions of his time respecting the seat of the soul.

Harvey's tribute to the blood as the very essence of life is thus scarcely exaggerated; it is the tissue which has relations with every other tissue and process in the body by virtue of its fluidity and the pressure of its penetration. It gives and receives, and yet in health is ever the same. Its intimate concern in all the relations of life may be further revealed in the additional features I have yet very briefly to mention.

The whole subject of the chemical reactions of the blood and the means by which the uniformity of its reaction and quality are maintained has been most recently and fully discussed by Dr. F. Gowland Hopkins in the Oliver-Sharpey lectures of this year.[3] Its uniform reaction under the imbibition of large quantities of acid and alkaline fluids and acid and alkaline-producing foods is as truly remarkable as its constant temperature in health. It is suggested that whilst the lungs are chiefly concerned in controlling the hydrogen ions due to carbonic acid, the kidneys are concerned with those due to other acids, chiefly lactic acid, formed in the muscles, with the result that the mean reaction of the blood is normally adjusted with great exactness.

Cholesterin is an important constituent of the blood, or rather an important agent circulating in it intimately concerned with cell life, which is now recognised as an essential and vivifying constituent of all cells. Its presence in the blood plasma may be only *en route* to its destiny in cell formation. With the disintegration of cells which takes place largely in the liver their cholesterin is set free to be reabsorbed and utilised in the generation of new cells.

Many of the ferments discovered—mainly by their effects—in the blood may perhaps be regarded, somewhat crudely from a physician's point of view, as to some extent contaminative, having their source as overflows from organic function (especially of the digestive cells) and of little or no importance in the vital mechanism, unless they should be in excess from accumulation owing to defective elimination when they act as poisons.

Abderhalden draws attention to the protective action of certain ferments in defending the body from the injurious effects of organisms and chemical substances which are foreign or "disharmonious" to the blood and tissues. He finds that the introduction into the blood of disharmonious substances results in the appearance of ferments which were not previously present, but which possess the property of breaking down the foreign substances into simpler bodies with which the cells are accustomed to deal. He regards such ferments as modifications of the normal metabolic processes of the cells of the tissues or blood, and would thus seem to sanction the view I have been advocating that the cells of the body are equipped for their own defence as well as their own nutrition, and

[3] THE LANCET, June 6th (p. 1589) and 13th (p. 1661), 1914.

may be principally concerned in the secretion of "opsonins" and "antibodies" appropriate to their needs. The first and second lines of defence provided by the gastro-intestinal and hepatic cells are described by Abderhalden, and the plasma derives from the tissue and blood cells the ferments required for further dealing with disharmonious intruders and rendering them so far disorganised as to be amenable to phagocytic action.

Abderhalden pushes his argument to the formulation of a diagnosis of pregnancy, carcinoma, and some other diseases by the recognition in the blood of ferments antagonistic to the proteins yielded by the placenta and carcinomatous growths respectively. No doubt his work will be subjected to careful scrutiny and will stimulate new researches. The question of the production of antibodies to meet other extrinsic infections he has not discussed.

INTERNAL SECRETION.

With the recognition of the fact that nearly every glandular organ in addition to its proper secretion discharged through its duct yields also to the blood a secondary secretion peculiar to itself, a large field of interest and inquiry has been opened up to physiologists and many previously obscure phenomena have become more clear to physicians. Herein may be found an illustration and perhaps an explanation of the correlation of organic function which has been spoken of as the *consensus partium*, through the messages—mostly chemical—communicated by each organ to the controlling nerve centres; in a word, the "chemiotaxis" of the embryonic germ is maintained through the medium of the blood between differentiated and distant organs.

Professor Berthold, of Göttingen, in 1849, first showed the existence in the testicle of this second function of contributing of its essence to the blood, and it was Claude Bernard who in 1855 first applied the term "internal secretion." But Brown-Séquard's experiments upon the testicular internal secretion gave the impetus to all the physiological and therapeutic work that has followed. Brown-Séquard's experiments (1889) and the therapeutic measures to which they pointed led to false hopes and to abuses of an unworthy kind which for a time brought some discredit upon them. Their value in the treatment of premature senility, climacteric disturbances, and of some mental ailments was in a measure established, though with exaggeration, but their chief importance rested upon the further researches they initiated with regard to generative and other glands. The therapeutic measures they instigated are used extensively, though somewhat surreptitiously, at the present day.

Investigations on the Ductless Glands.

The ductless glands were the first objects of this further inquiry, and in rapid succession there appeared important results from the physiological experiments and clinical observations of Schiff, Sir W. Gull, Miller Ord, Kocher, Victor Horsley, and others upon the function of the thyroid gland and the parathyroids. In 1856 Schiff showed that the thyroid gland was essential to life. In 1873 Sir W. Gull described the condition which he named the "cretinoid state in adult life in women," which was further studied by Dr. Ord, who more fully described the clinical features of the disease, which he named myxœdema and associated with atrophous conditions of the thyroid gland. A swelling of the gland of a peculiar kind had long been associated with exophthalmic goitre, and in 1882 Reverdin and Kocher discovered that the removal of the gland for this disease resulted in symptoms described as those of "cachexia strumipriva," which were of the nature of myxœdema. Similar symptoms were artificially produced in monkeys by the removal of the healthy gland, by Horsley in 1891. In the same year Dr. Murray, then of Newcastle, introduced the injection of thyroid extracts for the successful treatment of this disease, on the same principle as Brown-Séquard had used allied extracts for senile affections. Thus, and by further researches at other hands, the relations of myxœdema, cretinism, Graves's disease, and operative myxœdema or cachexia strumipriva to the thyroid gland have been fully established, and a new era of therapeutic treatment invaluable for the relief of human suffering has been opened up. More complex relations have been found in the internal secretions of the parathyroids to other organs, especially the pancreas.

The relation of thyroid essence taken up by the blood to cardiac innervation and to general metabolism is being carefully investigated, and has been so far established as to instigate various measures of therapeutic value.

Another great Guy's physician, Addison, first discovered (1855) the importance of the suprarenal glands and described the symptoms of a certain diseased condition of them which is known by his name. This discovery led to a chain of observations by Brown-Séquard, by Kölliker, and others until, in 1894, Schäfer and Oliver established the connexion between the suprarenal essence, and especially that of the medullary portion and blood pressure. Addison had recognised as a marked feature of his disease the notable depression in the pulse tension. Schäfer and Oliver discovered as a chief function of the suprarenal bodies the maintenance of blood pressure, and initiated an important and now well-known method of treating suprarenal disease and established the value of extracts derived from the gland as a sympathetic nerve stimulant. Further researches have shown that this extract especially affects circular organic muscle, including the heart and vessels, and there are many collateral effects still under investigation.

On similar lines interest attaches to the contribution of the pituitary body to the blood, its function in health, its effects under diseased conditions, and the therapeutic value of extracts derived from certain portions of it. The field of investigation has greatly widened, and the pancreas, the kidneys, the liver, and the gastro-intestinal cellular digestive tract have successively been found to yield not only their secretion into the ducts and channels with which they are properly connected, but a secondary internal secretion contributed to the blood.

Importance of Internal Secretions.

Professor Starling and Dr. Bayliss, to whose researches a large portion of our knowledge respecting the internal secretions of the digestive tract especially is due, have applied the term "hormone" to these secondary glandular products, and the term will probably soon be used to include all internal secretions. It is important to recognise Professor Starling's distinction of hormones from other materials or influences in the blood, such as antigens arising from toxins, ferments, &c., each with its corresponding antibody. Hormones readily pass through the capillary vessel walls, and, having effected their purpose, they undergo rapid destruction by oxidation or otherwise and are known no more. It may be the condition of greater simplicity

of composition, lighter specific gravity, and greater diffusibility attributed to these chemical essences that cause these hormones to get into the blood, whilst the more obvious organic secretions escape through ducts to their destination.

It would be difficult to exaggerate the interest and importance of these hormonic contributions to the blood from the different organs and tissues. Quite unobservable in their course, they yet convey messages and instructions to the nerve centres leading to vaso-motory relaxation or constriction of the capillary areas whence they proceed. In this way they correlate and regulate growth and function, at the same time preserving that *consensus partium* so comparatively easy in the simple amœboid structure. Here is a great function of the circulation, undreamed of by Harvey, in distributing these agencies, which is as imperceptible to our unaided comprehension as are the infinity of living particles in the clear atmosphere until illumined by a sunbeam, or the thought waves teeming in a crowded assembly. By their effects only can we gauge them, and only by the deepest and most subtle researches—by experiment upon their effects—can we learn these secrets of nature.

> Strange is it, that our bloods,
> Of colour, weight, and heat, pour'd all together,
> Would quite confound distinction, yet stand off
> In differences so mighty.[4]

The mental side of these phenomena is of great but at present, for the most part, speculative interest to the psychologist, the alienist physician, and the criminologist. In the phenomena of hysteria and its border-line manifestations, of insanity and of criminal impulses, as well as in the controlled impulses that account for character and discipline, we may find interesting fields for the study of the effects of internal secretions as they here and there emerge to consciousness from their sphere of automatic action.

DEFENSIVE ATTRIBUTE OF THE BLOOD.

The last attribute of the blood is that of defence against attacks, mainly infective, upon the organism, an attribute which eventuates in the establishment of immunity to infective diseases. After the experience of an infective illness the blood becomes more tolerant of that particular poison, whilst its defensive forces are strengthened and the poison influence is weakened or altogether neutralised. Thus immunity arises.

The Establishment of Immunity.

The methods of blood defence and the modes by which immunity is established are still matters of considerable controversy, and the various views expounded are often expressed with a vocabulary which obscures rather than renders more clear the arguments of the disputants. There are, however, two main contentions or schools of opinion: the one with which Professor Ehrlich is perhaps most identified, which regards the bactericidal influence of the blood as chemical and residing in the plasma; the other, held by Metchnikoff and his followers, regarding it as resident primarily in the cell elements of the blood and of certain tissues. It has been shown, mainly by the work of Sir A. Wright, that (as in most controversies) the essentials of both views enter into the truth of the matter.

From my earliest training to recognise the predominance of cellular over liquid plasmic processes, I must confess a strong prejudice in favour of the opinion of Metchnikoff that the leucocytes of the blood chiefly, and perhaps the endothelial cells of blood-vessels and serous spaces and the cells of the tissues to a greater extent than he would admit, are the source of such agents, doubtless mainly chemical, as are found in the blood plasma as alexins, ferments, antibodies, immune bodies, opsonins, or what not. These agencies, by whatever name they may be known, reinforce the general qualities of the blood serum in the attack upon living and for the digestion of dead foreign bodies, which are then consumed by the phagocytic action of the leucocytes and the other cells named. On the other hand, bacterial and protozoic organisms on their side, with their infinite productivity and the secretions they yield, may well be conceived to be capable in many instances of overwhelming the defensive action they at first excite. This is how the matter crudely presents itself to the mind of an average physician after labouring through as best he can the intricate and wonderful work of those numerous bacteriologists who have cast such brilliant light on the intimate biochemical processes of the blood. It is also readily to be understood how the local introduction of minute quantities of "disharmonious" substances, such as bacterial toxins, may excite the production locally of antibodies the absorption of which into the general circulation will reinforce the defensive qualities of the serum. We must not forget, however, that it is a natural process of defence, a tendency to immunity, which is excited by all bacterial and protozoic infections, the exact nature of which it has been the primary object of all these brilliant researches to show, and that it is the observation and study of this natural process which has prompted the use of artificial measures for its assistance.

Vaccine Methods of Treatment.

The immunity gained by an attack of certain specific diseases against further assaults has long been known to physicians: how mild attacks of small-pox, whooping-cough, scarlet fever, dissection wounds, will protect, at least for a time, often the lifetime, from further attacks. Lady Mary Wortley Montagu and Edward Jenner were pioneers in interpreting rightly this natural lesson in immunity, and the exact inquiries of modern observers have thrown so much light upon the processes concerned as to have established on scientific lines vaccine methods of treatment in many acute specific diseases and of analogous methods in some chronic diseases. It was Pasteur who, in 1880, revived the question of immunity on experimental lines in his observations on chicken cholera, and suggested the possibility of establishing artificial immunity in certain diseases. Within the lifetime of the youngest here diphtheria, enteric fever, tetanus, and plague have lost half their terrors.

The applicability of knowledge gained respecting immunity processes is now being utilised in certain chronic infective diseases, notably tuberculosis and perhaps arthritis. All practical physicians have long been aware of the fact that an attack of tuberculosis or repeated attacks having resulted in a chronic passive fibroid lesion, the patient if able to endure such lesion without fresh assault for a certain time acquires a very considerable, even a permanent, degree of immunity, and may die in later life from disease of a quite different kind. It is now recognised that such patients acquire and perhaps retain their immunity through the absorption of successive doses of tuberculin taken up by the blood in its course through their passive or indolent lesions. They are in possession of an

[4] All's Well that Ends Well, II., 3.

inoculate, a source of vaccine, in the remnants of quiescent morbid tissue left behind by the acute disease. Thus are they in a measure fortified against fresh infection. This view, which would seem to hold good with regard to tuberculosis and perhaps syphilis, may in a more subtle manner hold good also with regard to remnants left behind by the acute specific fevers, as so coarsely illustrated by the effect of inoculation in small-pox; such a hypothesis is at least interesting in bringing into line the doctrine of immunity with the phenomena of internal secretion already discussed.

Advantage has been taken of this knowledge in the rational treatment of tuberculous patients by retarding or exciting the circulation through their lesions by regulated exercises. A warning must attend these observations—viz., that some of these people have their leucocytic functions sensitised by such autogenous stimulation, and are thereby rendered unduly excitable to further stimulation—they are anaphylactic—in a greater or less degree, and tuberculin inoculations are apt, unless given with the greatest caution as regards dosage and repetition, to induce a recurrence of negative phases or periods of paralysed resistance very inimical to the patient's prospects. I cannot say that I have ever observed tuberculin vaccine given three times a day after meals, after the manner of the Court physician in the "Doctor's Dilemma," but I have often seen it given on unsuitable occasions and in recklessly repeated doses in entire ignorance of the intimate history of the disease and with disastrous results. The necessity of a period of restful quietude after any administration of tuberculin is further emphasised by the above considerations.

CONCLUSION.

We have seen how heart and pulmonary mechanism are subordinate to the circulation of a vital stream which, so constant in all its physical aspects, so infinite in its attributes and adaptations, dominates all the functions of life. Might not Harvey quote Leviticus—"for the life of all flesh is the blood thereof"—with even greater conviction to-day?

I have yet, Mr. President, one duty to perform, and that is to exhort the Fellows and Members of the College to continue their endeavours for the advancement of the College in learning and general prosperity. It is impossible to record the numberless gifts to the College since Harvey's time; gifts of learning, gifts to the library, gifts of valuable and interesting documents relating to the College, gifts for research, gifts for hospitality. In the past year such gifts have been continued and were recorded in your address recently published. Harvey's further exhortation to the Fellows was that for the honour of the profession they should continue "in mutual love and affection amongst themselves, without which neither the dignity of the College can be preserved, nor yet particular men receive that benefit by their admission into the College which else they might expect, ever remembering that *Concordia res parvae crescunt, discordia dilabuntur.*"

I gratefully acknowledge the kind help I have received from my colleague Dr. R. A. Young in the literature, especially that relating to the blood; and also my great indebtedness to Miss E. Parry for much assistance in revising the proofs and in verifying the references, only a small fraction of which are annotated in the text.

TRAUMATIC TETANUS.

BY M. H. GORDON, M.A., M.D., B.Sc. OXON.,
ASSISTANT PATHOLOGIST TO ST. BARTHOLOMEW'S HOSPITAL.

THE appearance of tetanus among those wounded during the recent fighting on the continent and the possibility of further cases seemed to make it desirable to look up the literature of this fortunately rare disease, and also to place on record any personal experience, however small, of its bacteriology. The following notes, incomplete though they necessarily are, may possibly be useful. I am encouraged to this course also by the fact that acting on a happy suggestion of Dr. J. H. Drysdale I have consulted the monograph on tetanus for which the late Professor A. A. Kanthack received the Jacksonian Prize in 1895. This essay is kept in the library of the Royal College of Surgeons of England, and consists of two volumes, the second of which contains a large number of original photographs and illustrations. I have found this essay of very great value not merely because it contains a review of the literature up to that date, but chiefly because it embodies the result of a year's original research on tetanus by Kanthack. Accordingly, I have drawn upon it largely in the following paper, as also upon the recent comprehensive reviews of Eisler and Lingelsheim.

Characters of the Disease.

Clinical diagnosis.—It is unnecessary to go into detail with regard to the classical symptoms of tetanus—trismus, rigidity of the muscles of the neck, opisthotonos, &c.—for they are unmistakable and thoroughly well known. It is of interest, however, to note that whereas in man and the horse, in whatever region the site of the superficial wound may be, the earliest muscles to be affected appear to be those of the neck and jaws, in other animals the disease generally begins as a local tetanus—i.e., the muscles nearest the site of inoculation are affected first, and the disease spreads from that point in a definite order. Sawamura, whose work is quite recent (1909), recognises three kinds of tetanus: tetanus ascendens, tetanus descendens, and mixed tetanus.

In tetanus ascendens the local muscles are affected first, next the tetanus spreads up the limb, then to the opposite limb, and finally up the trunk. This is the form commonest in experimental animals after subcutaneous or intramuscular injection. It is possible, however, that this type is not so rare in man as may be supposed. Witness the case of M. Nicolas, laboratory assistant to M. Courmont and M. Doyon, who accidentally introduced into his thenar eminence the point of a syringe which had just been used for the injection of an animal with tetanus toxin. Although he received only a trace of toxin, Nicolas, after an incubation period of four days, developed tetanus, and the contractures began in the inoculated hand, then spread up the arm and became generalised. After a severe attack lasting 41 days he recovered. This, therefore, was a case of ascending tetanus, and it is to be hoped that a sharp look out will be kept for any stiffness of the local muscles, for Sawamura has shown experimentally the great value of a local intraneural injection of antitoxin at this stage of the disease. Tetanus descendens appears to be the commonest form in man and the horse. The muscles of the jaw and neck are first affected, and then the disease spreads down the body. It is of

graver significance than tetanus ascendens. In mixed tetanus both the above forms occur.

Prognosis.—There are few diseases in which we have such sure knowledge available for the purpose of prognosis. The patient's chance of life depends upon (1) the incubation period, (2) the rapidity of onset and severity of spasms, and (3) the duration of the disease. Of these points (1) is the most important and (2) comes next. In the words of Kanthack, "fatality is in direct proportion to rapidity of onset, and inversely proportional to the duration of the disease." It is perhaps permissible to illustrate this point by an example. Rose collected over 700 cases of tetanus. He found the mean mortality to be 88 per cent. Of those developing tetanus during the first week 91 per cent. died, during the second week 81 per cent., and during the third week 52 per cent. Richter and Poland, who also investigated this matter, have published similar figures. Richter has stated, by the way, that of 717 cases of tetanus contracted on the battlefield 80 per cent. died. In 1892 Rotter drew attention to the fact that tetanus cases with an incubation period of less than ten days are extremely severe, and Tilmann in 1907 emphasised the same point. Cases in which the march of the symptoms is rapid and the spasms severe are very fatal. As regards duration, it would seem that if the patient lives two days after the tetanic symptoms have begun, his chances of recovery are greatly improved. In this connexion it is of interest to recall the aphorism of Hippocrates: "Such persons as are seized with tetanus die within four days, or if they pass these they recover." This dictum would seem to be in the main true to-day, if a trifle optimistic.

As will be described later on, some of the virulent bacteria frequently associated with the tetanus bacillus in the wound have a way in certain cases of invading the patient even when the long range effects of the tetanus bacillus have abated.

The Bacteriology of Tetanus.

Isolation of B. tetani (a) from earth.—The cause of tetanus is a bacillus which Nicolaier found and described in 1884 in animals rendered tetanic by inoculation with particles of earth. On this subject Kanthack writes as follows:—

> In attempting to obtain it from earth we must first make sure that the sample of earth actually contains the tetanus micro-organism. This can be done only by means of animal experiments, mice lending themselves best for the purpose. If the mice become tetanic then we may proceed with the separation of the bacillus from the earth by suspending it in broth to which 1–5 per cent. carbolic has been added. Place these tubes now at 70–80° C. for one hour and then incubate them anaerobically at 37° C. Next day heat again, and on the third and fourth day again. It is by no means easy to separate the tetanus bacillus from soil; the ease with which it can be done seems to depend on the number of spores present. If the bacillus of malignant œdema is present plates must eventually be made, since this bacillus is both anaerobic and sporogenous.

(*b*) *From pus.*—In attempting to isolate B. tetani from mouse or man the pus or local scrapings are distributed in carbolised broth and treated in the same way as in the case of the earth. After the fourth day by means of a capillary pipette a number of grape sugar broth tubes are liberally inoculated and kept anaerobically in Buchner's tubes. After a few days the tubes must be examined microscopically, and if any contaminations are present the heating must be repeated until eventually we succeed in obtaining pure cultures. This is a certain method of obtaining the tetanus bacillus from pus or tissues containing it, provided no other sporing organisms are present which are also anaerobic. If such occur then we must plate out on formate agar or on glucose gelatin. The surface growth of a pure culture of B. tetani on ordinary peptone broth agar containing 0·5 per cent. of sodium formate shows up after 24 hours at 37° C. anaerobically as a series of small raised punctate transparent colonies. These colonies slowly increase in size, but always retain their transparency. This is important, for any distinctly opaque colony is almost invariably a contamination. So characteristic, says Kanthack, is the growth on formate agar that "I always use this culture to satisfy myself as to the purity of my stock material." Cultures of B. tetani in broth or gelatin maintain their vitality at room temperature for as long as six months.

The Bacteriological Diagnosis of Tetanus in Man.

(*a*) *By film preparations.*—Film preparations of the local pus have as a rule very little value for establishing the presence of B. tetani owing to the fact that this bacillus appears only sparsely in the local material and does not show up there in the characteristic drumstick shape, but chiefly occurs in the form of slender rods. Kitasato noticed that the bacillus disappears locally, and Vaillard and Vincent demonstrated that there was no appreciable multiplication, and that even in fatal cases local films might fail to show the presence of the tetanus bacillus so soon as 14 hours after inoculation. The value of film preparations, therefore, in man is mainly to see if a mixture of organisms is present suggestive of earth infection. Tetanus cases are probably in all cases primarily a spore infection. Besides streptococci or staphylococci, coliform bacilli may be found in the wound, and in the worst cases the well-known large Gram-positive anaerobic spore-bearing bacillus associated with emphysematous cellulitis is present.

(*b*) *By culture.*—Vaillard and Vincent ascertained that, in spite of the local rarity of the tetanus bacillus in films, it could always be recovered locally by culture in the case of animals that subsequently developed tetanus. It would appear advisable, therefore, to make attempts to isolate the tetanus bacillus by culture in cases where the presence of the micro-organism is suspected or proved. An even more certain way, however, and a much quicker one in the present state of our knowledge, is to inoculate a mouse with material from the wound. In positive cases the mouse becomes tetanic within three days; though it would appear that the disease cannot be indefinitely transmitted from mouse to mouse by inoculation with their local pus; after the third transference the disease may fail to pass.

The Importance of the Associated Bacteria in Human Cases of Tetanus.

As long ago as 1891 Vaillard and Vincent showed that when freed of adhering toxin either by washing or by heat neither B. tetani nor its spores produced tetanus in animals by simple inoculation. They found, however, that the toxin-free bacillus or spore could produce the disease if they bruised the tissues locally by pinching them with a forceps, also if they simultaneously injected either lactic acid or another micro-organism, such as B. prodigiosus or even its filtrate. These experiments are generally held to show the importance of bruising and also of a mixed infection in the genesis of tetanus. There is reason for doubting, however,

if it is even now clearly realised how very important the associated bacteria may be. It has been stated before that the commonest cause of tetanus is infection of a wound with earth, and this, of course, always contains a variety of bacteria and spores. The earth of chief repute for producing tetanus is that soiled with the manure of horses and cattle. It is of interest in this connexion to note that while tetanus was found by Pizzini to be present in human fæces in 5 per cent. of the cases examined by him it was found by Sanchez Toledo and Veillon to be present in the excrement of cattle in 50 per cent. of the cases. Now the dung of horses and cattle, as also of man, constantly contains a large Gram-positive anaerobic spore-forming bacillus in very considerable numbers, and owing to its abundance in horses' excrement this same micro-organism is constantly present in street dust. On inoculation subcutaneously into animals the microbe in question produces a spreading emphysematous cellulitis quickly followed by death from septicæmia. This micro-organism or varieties of it are known by a plurality of names —e.g., vibrion septique of Pasteur, B. aerogenes capsulatus of Welch, B. enteritidis sporogenes, and B. perfringens. Spores of it are constantly present in large numbers in street dust, and quite a considerable proportion of cases of street accidents in which there is much laceration of the skin and subcutaneous tissues succumb to infection with this micro-organism. Now the point which I wish to emphasise is this. In three out of the four fatal cases of tetanus which I have had the opportunity of examining both before and after death at St. Bartholomew's Hospital during the past three years this bacillus of Welch was present in the local pus during life. In two of these fatal cases of tetanus the heart's blood of the patient contained the bacillus of Welch in pure culture and in very large numbers. In the first of these cases, a gardener, aged 27 years, with crushed fingers, the incubation period of his tetanus was 16 days; the tetanus disappeared after intracerebral injection of tetanus antitoxin, but in spite of the removal of his crushed fingers and the abatement of his tetanus an emphysematous cellulitis spread up his arm and he died on the fifth day from the onset. Death in this case was, I feel certain, due to Welch's bacillus. In the next case, a female aged 52 years, who fell out of a cart on a country road as the result of being run into by a motor-car, and sustained a compound fracture of her right radius and ulna, the incubation period of the tetanus was six days; the degree, however, was not intense. The patient died at the twenty-seventh hour, and I have personally little doubt that the septicæmia from Welch's bacillus, proved at the post-mortem examination, was the chief cause of her death. In the third case, a labourer aged 18 years, who ran a pitchfork into his foot, the incubation period was seven days, and the duration of life after tetanic symptoms began four days. Here the local pus showed streptococcus only as the associated micro-organism, but post mortem this streptococcus was found to be present in large numbers in the heart's blood. In the fourth case, a boy aged 10 years, with a compound fracture of his tibia and fibula sustained in a street accident, the onset of tetanus was on the sixth day; the spasms were very severe, and he succumbed within 24 hours. Welch's bacillus was present in the local pus, but this patient's heart's blood was sterile.

This personal experience of tetanus, therefore, limited though it is, has led me to attribute a very important rôle to the associated bacteria, particularly in fatal cases. It seems probable that the explanation of the difference in prognosis according to the length of the incubation period to which reference has been made is directly due to the association of B. tetani with other virulent bacteria of which the most important is the anaerobic bacillus of Welch. The bearing of this observation upon the rational treatment of tetanus will be discussed later.

Tetanus Toxin.

When Nicolaier discovered the tetanus bacillus at the site of inoculation in his tetanic animals and found that it did not become generalised throughout the tissues he suggested that this microbe was capable of secreting *in loco* a soluble poison the diffusion of which gave rise to the symptoms. The correctness of this view was proved in 1890 by Knud Faber, who showed that the bacterial-free filtrate obtained from a broth culture of B. tetani was capable of producing all the symptoms of tetanus. Since that date a very large amount of work has been done on tetanus toxin, which appears to be the most poisonous substance at present known. Hallock Park brings this point out by the following figures quoted from Lambert. It is computed that the fatal dose of concentrated dried toxin for a man of 75 kilogrammes would be 0·23 milligramme. As the fatal dose of dried cholera venom would be 4·38 milligrammes (Calmette), of strychnine 30–100 milligrammes, and of anhydrous prussic acid 54 milligrammes, the appalling strength of tetanus toxin can readily be appreciated. Tetanus toxin is readily soluble in water, is precipitated from the broth by alcohol, and is not dialysable. It is destroyed by exposure to 60° C. for 20 minutes, or to 65° C. for five minutes, and is attenuated by exposure to light and air at the room temperature. It does not appear to be harmed by the addition of 0·5 per cent. carbolic acid, which is sometimes added to it as a preservative. A destructive action, however, is exercised upon the toxin by iodine trichloride, by hydrogen peroxide, by potassium permanganate, or by organic oxidases extracted from the liver, spleen, or kidney. Tetanus toxin has been shown by Ehrlich to contain a hæmolysin as well as its more important constituent, tetanospasmin.

Path of the Toxin.

The *modus operandi* of tetanus toxin upon the central nervous system has possessed a great fascination for the experimental mind. At first it was suggested that the toxin merely increased irritability of the reflex arc, but Autokratow in 1892, and later Gumprecht, disposed of this view by showing that section of the posterior roots of the nerves supplying one limb failed to prevent the appearance of tetanus in that extremity. This experiment proved that tetanus toxin was a direct motor poison. Marie, however, in 1897 appears to have been the first actually to demonstrate that tetanus toxin was absorbed and carried from the site of inoculation by the local nerve trunks. One of the most convincing experiments establishing this neural conductivity of the toxin is that of Meyer and Ransom, who showed that the minimal lethal dose of toxin for an experimental animal is less when injected intraneurally than when given intramuscularly. In 1898 Wassermann and Takaki published their classical experiment showing that tetanus toxin when brought

in contact with an emulsion of normal brain in suitable proportions *in vitro* becomes inactivated, and that an emulsion of cord has the same capacity, though to a less degree, while emulsions of other organs have no such value. This toxin-binding capacity appears to pertain to the grey matter rather than to the white, and emulsions of cortex are more active than those of the basal ganglia. When the emulsion is boiled it loses its activity, and the chemistry of the reaction does not yet appear to have been worked out. Interesting though this demonstration of the specific affinity *in vitro* between the cortical nerve cells and tetanus toxin be, the fact must not be lost sight of that (as Roux and Borrel showed) the injection of tetanus toxin directly into the brain of a living animal is followed by remarkable psychical changes, epileptiform and tetanic convulsions, polyuria, and death. Thus while an emulsion of cortical cells absorbs tetanus toxin *in vitro*, the whole brain of the animal fails to protect it *in vivo*.

Marie, moreover, found that the subcutaneous injection of cerebral emulsion failed to protect a living animal against tetanus toxin. Intimate contact, therefore, between the nervous elements and the toxin is indispensable for the success of the binding phenomenon. To return, however, to the path of the toxin. In 1901 H. Meyer showed that it was possible to recover tetanus toxin from the local peripheral nerve supplying the part infected. In 1902 Marie and Morax published a brilliant piece of experimental work in which they proved that tetanus toxin travels upwards to the central nervous system not so much by capillaries of the nerve trunks as by the axis cylinder and its peripheral terminations. They found, further, that while the toxin flows upwards in the axis cylinders to the nerve cells in the cord, it does not flow in the reverse direction—in other words, there is only a centripetal flow. The experimental work of Meyer and Ransom also indicated this path of the toxin *vid* the axis cylinder process. Once again, however, it must be borne in mind that the nerves are not the sole route by which tetanus toxin can be absorbed. This is forcibly shown by an experiment of Sawamura, who found that where a fourfold fatal dose of toxin (as estimated by intramuscular injection) was injected into the muscles of the hind leg of a rabbit, tetanus ascendens invariably followed; whereas when this same dose was injected into the tip of the toe of the animal, not tetanus ascendens, but tetanus descendens was produced. The explanation which Sawamura gives is that in the first case the toxin is rapidly absorbed by the numerous nerve endings in the muscle, runs up the axis cylinders to the motor cells in the cord, and produces first a local tetanus, then a tetanus ascendens; whereas in the tip of the toe, which is a muscle-free region, the toxin is absorbed by the lymphatics, whence it passes into the blood stream, gains the central nervous system, and so gives rise to tetanus descendens without producing local symptoms.

Antitoxin.

While tetanus antitoxin has been a brilliant success when applied prophylactically, and its efficiency in this sense is beyond question, there is no doubt that up to the present its employment after the onset of tetanus has proved disappointing. Nor is the reason for this far to seek. A view frequently taken is that by the time the patient's symptoms have developed sufficiently to place the diagnosis of tetanus beyond all doubt he is too often beyond remedy. The poison has reached his nerve cells and the unholy matrimony has been completed.

But before we take this pessimistic view with regard to the clinical application of tetanus antitoxin, it is well to consider briefly the available evidence on the matter under two headings. 1. The view of those who have gone into the remedial value of tetanus antitoxin. 2. The experimental evidence showing what can be done in the way of recovering animals from tetanus toxin.

1. One of the most careful and impartial investigations concerning the value of tetanus antitoxin after the onset of the disease is the paper by Kanthack which appeared in the *Medical Chronicle* during 1895. The conclusion which he came to was that "the serum treatment has not actually changed the prognosis in acute and serious cases. I believe that in milder cases it lessens the spasms, the pain, and the distress, and that apparently it has reduced the mortality in such cases, but to what extent we cannot tell until we are in possession of a larger number of cases, and until we are certain that all cases are published." This view is also the one which appears to be generally held by surgeons at the present time.

2. It is doubtful, however, if the remarkable experiments of Roux and Borrel, published three years after Kanthack wrote the above words, have received the universal consideration which they deserve. It has been already stated that Roux and Borrel produced tetanus by intracerebral injection of the toxin. They next demonstrated that this cerebral tetanus was not prevented by previous subcutaneous injection of antitoxin—even though the rabbit's blood contained abundance of antitoxin at the time, the intracerebral injection of toxin gave rise to tetanus. Their most striking experiment, however, was the following one. They gave to each of 20 guinea-pigs in the hind paw a dose of toxin fatal in about 70 hours. Eighteen hours later all the guinea-pigs had rigidity of the hind paw. By the twenty-fourth hour they were all tetanic. The 5 largest guinea-pigs were kept as controls; they died from the sixty-seventh to the seventy-fourth hour. Three of the guinea-pigs were injected subcutaneously with antitoxin; they died from the sixty-fourth to the seventy-second hour. The 12 remaining guinea-pigs had a small dose of antitoxin introduced intracerebrally—two drops into each hemisphere. In all of these animals the tetanus was arrested, the contractures remained limited to the paw, or to the two hind legs according to the hour of intervention. A month later the guinea-pigs were well, but the contractures still persisted. The conclusion which Roux and Borrel came to as the result of this and other experiments was that "a few drops of tetanus antitoxin in the brain cure tetanus better than large quantities introduced into the blood or under the skin. It is not sufficient to give the antitoxin; it must be introduced in the right manner. There is a point in the disease, however, beyond which antitoxin is of no avail in whatever fashion it is employed. The intracranial injection lengthens the period of efficacious treatment."

The further information which has been obtained of tetanus since this paper of Roux and Borrel was written has brought nothing to controvert the value of their work, but has rather confirmed it. The proof which has since been furnished that the

axis-cylinders of the peripheral nerves are the main conduit of the toxin centripetally emphasises the importance of introducing antitoxin among the central neurons of persons stricken with tetanus. Abbe remarks that he has found in human cases that the intracerebral injection of antitoxin produced prompt arrest of the general convulsive spasm, a remark which I can confirm from a case in which I personally assisted Mr. D'Arcy Power in this operation.

Abbe gives the following directions for introducing the antitoxin intracerebrally. A line is drawn from one auditory meatus to the other across the vertex of the skull. From the point at which this meets the middle line a second line is drawn to the outer angle of the orbit. The middle point of this last line gives the site for the injection (Roux's point). An incision is made in the scalp and a small trephine or drill is used. The operation can be done under a local anæsthetic, but, as Bosanquet and Eyre say in their book, there does not seem to be any advantage in this over general anæsthesia, which also has the advantage of controlling the spasm. The point of the needle is thrust through the dura mater and into the cerebral substance. The antitoxin is then slowly forced into the brain. It is enough to put 5 c.c. into each side. It would seem better to inject the antitoxin into the actual brain substance than into the lateral ventricle, since the latter is practically equivalent to subarachnoid injection, which can be more easily effected by introducing the antitoxin intrathecally. This might be done at the same operation after withdrawing an amount of cerebrospinal fluid equal to that of the serum injected.

While the above procedure would seem to offer most hope in the case of a person suffering from traumatic tetanus, especially in those cases where the incubation period is short and the disease therefore severe, it would appear rational to introduce the antitoxin at the same time into the circulation, and also locally so as to neutralise any free toxin in these situations. This is desirable also because in some fatal cases of tetanus the bacillus undergoes a certain amount of dissemination. There are advocates, too, of the intraneural injection of antitoxin, but while this is clearly indicated in cases of local tetanus and in ascending tetanus, the intraneural injection does not seem likely to be so valuable as the intracerebral when such phenomena as trismus or rigidity of the neck muscles have appeared; for symptoms such as these imply that the toxin has already reached the higher levels of the central nervous system.

The question as to how to deal with the anaerobic bacillus of Welch when it is also present has not yet been satisfactorily solved. At the present time the best thing to do seems to be to give the wound as much drainage, free air, and permanganate as possible. The announcement of Rosenthal[1] that he has found the serum of an animal prepared against B. perfringens to possess marked preventive properties justifies the hope that before long such a serum may be available for administration in that way.

[1] Comptes Rendus de la Société de Biologie, 1910.

ARMY AND NAVY MALE NURSES' CO-OPERATION.—The seventh annual general meeting will be held at 89, Harley-street, London, W., on Wednesday next, Nov. 4th, at 3 P.M. H.R.H. Princess Henry of Battenberg will be present to represent Her Majesty Queen Alexandra.

FURTHER RESULTS IN THE ELECTROLYSIS TREATMENT OF CYSTITIS.

BY CHARLES RUSS, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

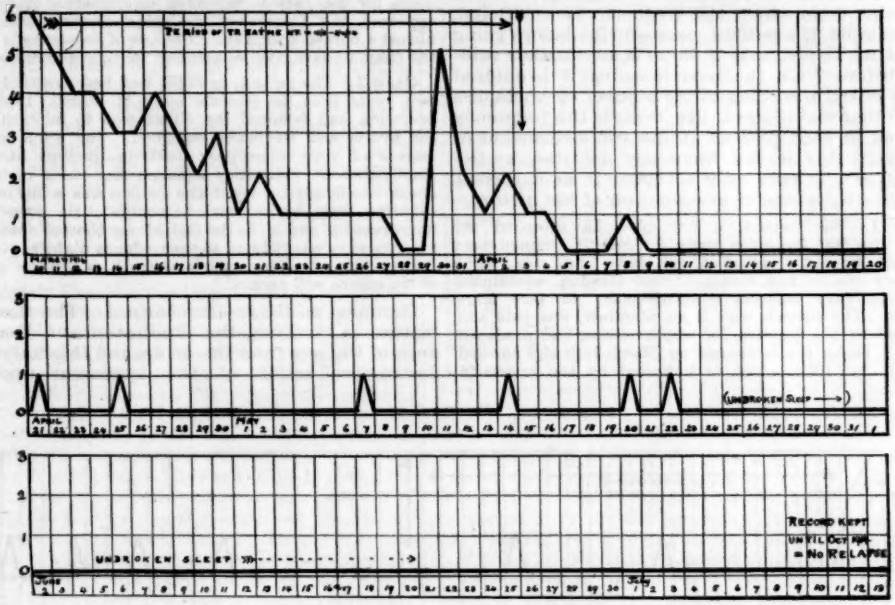
IN THE LANCET of Feb. 14th, 1914, I outlined a new method of treating coli-cystitis. In that article my experimental laboratory work was recalled, and the reasons were shown which led to the evolution of the process. I do not propose to enter into the diagnosis, bacteriology, or prognosis of the malady, for these are adequately dealt with in the text-books; but I intend to set forth the results obtained in some of my recent cases. Since passing the experimental stage I have in the last few years chiefly treated cases of chronic cystitis, and the majority of the patients, whether private or hospital cases, had previously received treatment by vaccine, injections, or lavage.

In a typical case of cystitis one realises that the patient does not much mind any symptom except the frequency. This is really their trouble. The patient's day is disturbed by the frequent or incessant call for micturition, and at night perhaps every hour or two there is a disturbance of sleep. There is little wonder that the victims of the chronic form present the appearance they do, and that their general health becomes undermined. It is usually conceded that the medicinal and other remedies in common use can do little, at least permanently, to combat the frequency. This is necessarily so because of their incapacity to deal directly with the bacteria. My method has the advantage of overcoming the organisms by a succession of blows at them *in situ*, and perhaps this accounts for its success.

The method.—Without going into detail I may repeat its essential points. After the urine is voided a special catheter is passed into the bladder, but no lavage is undertaken. A few ounces of fluid are then passed in, and the catheter with a glass tube attached is fixed upright by a clamp; this makes a fluid system of the bladder, the catheter, and the tubing. The upper level of the fluid is seen through the glass tubing to rise and fall with respiration. A lint-covered metallic belt encircles the lower trunk at the hip level and is connected to one wire of the battery. The other wire (platinum) is passed down the catheter and conveys the current through the fluid to the interior of the bladder. Radiating from the perforations around the catheter eye numerous electric streams pass in all directions through the bladder and lower trunk to reach the metallic core of the belt. In this way we have an electro-chemical action penetrating the bacteria and the entire vesical tissues. This action goes on for an hour or an hour and a half at each treatment. While the treatment proceeds the bladder is being gradually distended by the incoming urine and its recesses become exposed to the forces at work. The patients are unaware of the current's flow and recline at their ease, being occupied in reading and often also enjoy a smoke. If any pain or discomfort is felt it is certain that something in the arrangements needs readjustment. The only modification of the process I described is to increase the time up to one and a half hours at each administration.

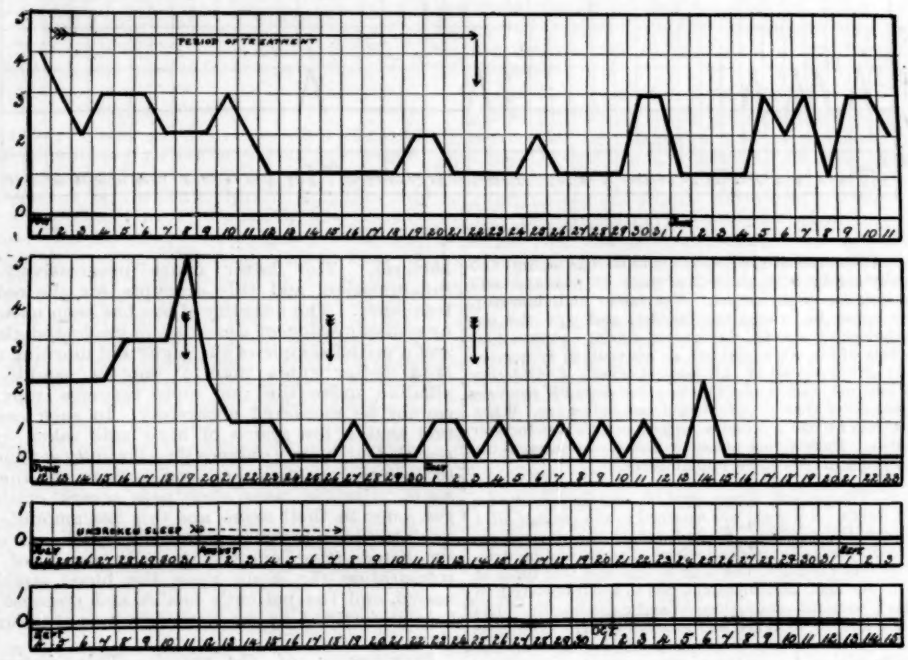
Types of cases illustrated.—I have selected three from my private and hospital cases which show different clinical pictures of cystitis and also

Night voidances. Frequency. CHART 1.



CASE 1.—Cystitis seven years.

Night voidances. Frequency. CHART 2.



CASE 2.—Cystitis six weeks.

different bacteriology. My method of charting the frequencies is as follows. I take as a standard a night of eight hours' sleep uninterrupted by micturition. The time of voidance when going to bed is the point from which the frequency is calculated. For example, if a patient passes urine before going to bed at 11 P.M., and if there is any further voidance before 7 A.M. the next morning, it is entered in the chart according to the number of voidances within that eight hours. As regards the frequency ascribed to each patient at the commencement of the chart, this is the frequency declared by the patient, and I have only accepted it as a correct average after a careful examination of the history.

CASE 1.—The patient, a man aged 51, attended St. Peter's Hospital for seven years for cystitis. Symptoms: The day frequency equalled one hour, and the night frequency one or two hours. Urine alkaline, containing ropy muco-pus; bacteria (staphylococci) in very large numbers. The patient, who is an abstainer, was pale and depressed by his disorder, for which nothing had produced relief. I began the treatment on March 10th and finished on April 3rd, 1914, which is indicated by the arrows in Chart 1. At the end of the course his urine was neutral and occasionally acid; it contained a trace of pus and still pretty numerous staphylococci. The latter had, however, lost their power to irritate the bladder, and both the pus and staphylococci slowly diminished during observation. Two loopfuls of his urine planted at his visit in September gave only five colonies of the staphylococci. Considering that he had not had a night's sleep for years his recovery was a great relief after so considerable an endurance. When I last saw him he had not had a broken night's rest for over four months. During this patient's course of treatment the current did not exceed three milliampères.

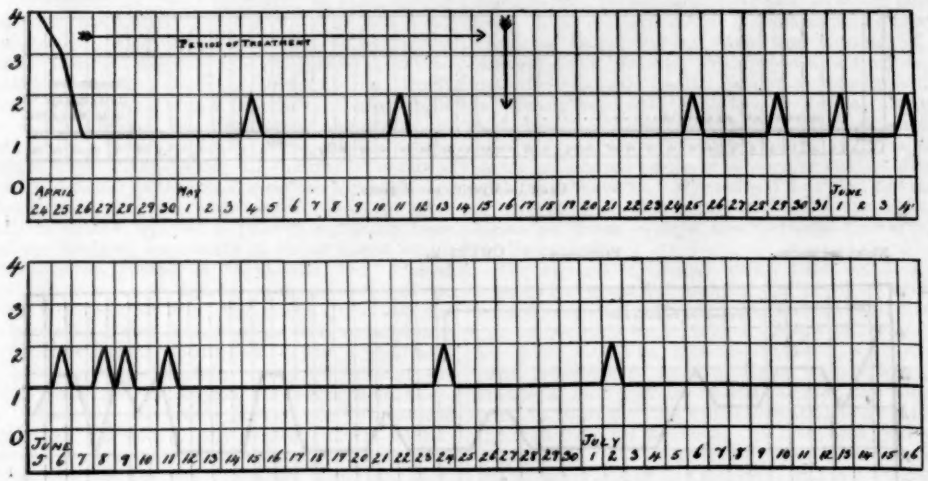
CASE 2.—The patient, a man aged 50, had had cystitis for about six weeks. Its onset was ascribed to the passage of a bougie down the urethra. He had passed this instrument himself for 20 years after medical advice of an impending stricture. Frequency equalled one hour by day and four times at night. Urine acid, and contained pus to about one-sixth of its volume; bacteria—staphylococci and colon bacilli. The patient was flushed, anxious, and miserable. His symptoms soon subsided under the treatment, but in view of the tendency to relapse I gave three more separate administrations at intervals of a week. These are shown by the arrows in Chart 2. The patient had residual urine varying from 3 to 8 ounces, and a resistance to the catheter was always met in the deep urethra, suggesting prostatic trouble. Mr. J. G. Pardoe's examination, however, showed an uncommon curve in the deep urethra with a normal prostate. This finding was amply justified by the result of the treatment, for the patient recovered completely. His pus disappeared, and I watched the urine clearing until it was almost a normal specimen. The loss of frequency is seen in the chart to have been established for several months.

CASE 3.—The patient, aged 63, had had cystitis for about two years prior to prostatectomy in March, 1914. The operation had removed the obstruction to micturition, but the pyuria and frequency remained. The urine contained masses of ropy muco-pus; bacteria—proteus bacilli and staphylococci. Frequency equalled four times nightly and about two-hourly by day. The patient was a nervous man suffering from asthma and bronchitis. He soon showed improvement, and up to the end of my charted observations his frequency was reduced to one voidance nightly. (Chart 3.) Perhaps this retentive power is as much as the new anatomy of the organs will permit.

Comment on the results obtained.—The dominant feature is, I think, the diminution and disappearance of the pus from the urine, and this follows the destructive action of the treatment upon the bacteria. The latter cause progressively less inflammation, and this accounts for the reduced frequency. The quantity of pus has been measured by sedimentation of the urine in graduated glasses, and a mixed sample of the night and morning urine is a better guide than a random sample. In alkaline urine the pus soon becomes ropy and cannot be measured accurately. In such cases I find that a few grains of boric acid taken by the mouth four-hourly reduces the alkalinity sufficiently to keep the pus fluid, and comparisons can then be made. Cystitis cases often pass several ounces of pus a day in their urine, and this loss amounts in a week to the impressive quantities which are often evacuated from empyemata. By arrest of this suppuration the drain upon the blood stream is stayed, and the patient's health and strength also become fortified by the longer periods of unbroken sleep.

Permanence of the results.—This important matter can only be proved by continued observation and obtaining the patients' records long after the treatment has ceased. I have been able to secure

Night voidances. Frequency. CHART 3.



CASE 3.—Post-prostatectomy cystitis.

such records for periods of six months and even a year after giving the treatment, and all my charts are compiled from the patients' manuscript frequency dockets.

Pathological observations and considerations.—1. Large numbers of the bacteria remaining in the bladder after voidance of urine are killed during the flow of the current. They are, however, not all killed during one treatment, but they receive a series of lethal and sublethal electrical penetrations. The bacilli become changed in form and in their staining characters, and finally the urine becomes clear. 2. Observation of stained films from the urinary deposit shows the advent of phagocytosis, sometimes very pronounced, and this is not a common feature in the urine of cystitis. This ingestion of the bacteria by the pus cells of the urine suggests that the treatment induces a congestion of the bladder vessels, which by increasing the opsonin would account for the phagocytosis. I have seen the vessels of varicose ulcers strongly congested after electrolysing them, and if such congestion is induced in the bladder vessels the effect is similar to that of Bier's bandage applied to the limbs. Believing as I do that the opsonin is increased I avoid lavage of the bladder.

I am much indebted to Mr. Pardoe for his interest and support in the development of this method of treatment. Besides selecting cases at St. Peter's Hospital suitable for the treatment he has seen the patients afterwards and at intervals some months later for witness of the permanence of the cure or relief. My thanks are also due to Dr. R. Miller for his excellent suggestion of charting the numerical records of the frequencies.

Beaumont-street, W.

SMALL-POX, VACCINATION, AND THE NEW VACCINATION LAW IN SIAM.

BY H. CAMPBELL HIGHET, M.D. GLASG., D.P.H.,
PRINCIPAL MEDICAL OFFICER, LOCAL GOVERNMENT, SIAM.

Small-pox in Siam.

THROUGHOUT Siam, as in most other eastern countries which are not yet sufficiently protected by vaccination, small-pox is endemic, and from time to time takes on an epidemic form. Amongst the Siamese the disease has two names, the classic name being "kai dara pit," meaning the fever of a very harmful nature, while the vulgar title is "fi dat," the disease characterised by the eruption of boils all over the body. There are no records which show when small-pox first came to this country. In Bangkok it would seem that there is a fairly regular cycle of epidemicity. Every three or four years the disease becomes epidemic, persists for a few months, and dies down again for another two or three years.

The seasonal incidence of small-pox.—30 per cent. of the cases occur during January and 19 per cent. during December, the coolest months of the year in Bangkok.

The general death-rate from small-pox cannot be given in the absence of any knowledge of the number of cases which recovered, but of 379 cases under observation in the hospital for infectious diseases 211 died, giving a death-rate of 55·9 per cent. During the epidemic of 1911–12 the total deaths from small-pox amounted to 2368, equal to a mortality of 4·3 per 1000 of the population, amounting to 540,679 according to the late census (September, 1909).

The age at death in the above cases is given in the accompanying table, which confirms the view that the population of Bangkok is not yet sufficiently protected by vaccination.

Ages at Death from Small-pox.

Age.	Sex.		Total.	Rate. per cent.
	Male.	Female.		
Under 3 months	34	32	66	2·7
3 months to 1 year	277	293	570	24·0
1 to 5 years...	367	349	716	30·2
5 ,, 10 ,, ...	120	125	245	10·3
10 ,, 20 ,, ...	222	132	354	15·0
20 ,, 25 ,, ...	142	64	206	8·7
25 ,, 35 ,, ...	125	48	173	7·3
35 ,, 45 ,, ...	20	6	26	1·0
45 ,, 55 ,, ...	6	1	7	0·5
55 ,, 75 ,, ...	0	1	1	
Unknown	3	1	4	
—	1316	1052	2368	—

We note then that more than a quarter of these deaths were in infants under one year of age, and that 67·2 per cent. were in children under 10 years of age, a sure indication that vaccination has not been carried out sufficiently in Bangkok.

Methods of prevention against small-pox in Siam.—Vaccination is popular with the Siamese and has been so since its introduction in January, 1840. There are no "conscientious objectors" in Siam, and wherever and whenever a vaccinating officer is at work the people readily submit themselves or their children to vaccination. In the absence of vaccine lymph inoculation is still said to be practised freely in the interior of Siam. The honour of first introducing inoculation and later on vaccination into Siam is due to the American missionaries.

Inoculation against Small-pox in Siam.

As the history of these two movements is of some considerable interest I may be pardoned if I give here a few historical details. In this respect I cannot do better than quote the words of one of the principal actors in the movement, the late Dr. Bradley, the well-known American missionary and editor of the "Bangkok Calendar." In an article entitled "Inoculation for Small-pox," published in the "Bangkok Calendar" of 1865, Dr. Bradley writes as follows:—

There was once a very extraordinary waking up of the Siamese mind to do something to modify the virulence of small-pox. It took place in the latter part of A.D. 1838. That annual scourge was unusually widespread and malignant at that time. Great efforts had been made by the missionaries every year for the four previous years to introduce vaccination, but all in vain. Being surrounded by the small-pox, with scarcely any hope of shutting it out from their own families, they then felt constrained, by the providence of God, to endeavour to save their children by inoculating them with the small-pox. The blessing of the Lord made it a complete success, every one of the subjects of the experiment having taken the modified small-pox in the mildest form. His late Majesty the King of Siam, being informed of it, sent a body of the royal medical faculty to the missionary physician to inquire into the matter, and then make to him a full report of their investigations. It was a very novel and exciting event for those early years of Prot. Missions, to be visited by such a committee, from such a monarch. Those servants of the king were very particular and thorough in their inquiries, for they had a great charge in hand, and a stern master to serve.

About that time there was issued, from the press of the A.B.C.F.M. in this city, a little tract in the Siamese language, setting forth the advantages of inoculating for small-pox over having it the natural way, and the wisdom of the former course when the scourge is pressing fearfully upon one, and it is impossible to obtain the vaccine virus. A copy of this was sent to the king, and it was eagerly sought for and read by princes, lords, and the commoners. Presently 10 or 12 royal physicians were ordered by the king to visit the missionary physician daily for the purpose of seeing his practice in inoculating and treating the small-pox thus modified and divested of its virulence, and in this way to qualify themselves for inoculating in the royal palace. Having faithfully studied the art a few days with praiseworthy proficiency, they were armed with lancets and required to inoculate all that were unprotected in the palace of the king, and in the palaces of the princes, and in the families of the nobles and lords, and other officers of government in the city and out of the city. Other native doctors were encouraged by the king to follow this royal example, who extended the work, it is believed, into many of the provinces of Siam.

Inoculation was then the engrossing business and care, not only of nearly all the native physicians, but also of a large proportion of the better classes of the people, from the beginning of the year 1839 until the month of April. It is impossible to estimate the many thousands that were within that period inoculated; and it is very remarkable that amongst them all there was not, probably, more than one case in 500 that proved fatal until the hot season was ushered in, when the work became so much less successful that it was suspended.

The king then evinced his high appreciation of the blessings of inoculation by presenting to each of the royal physicians who had laboured in the work a purse of silver varying from 800 to 400 ticals, and to the missionary physician a purse of 240 ticals.

So generally was inoculation accounted a perfect success that those who had been waked up and blessed by it wished for nothing better to take its place; and consequently it became subsequently an obstacle to the introduction of vaccination, because it was regarded almost as safe and always a more certain protection against small-pox in the natural way than vaccination.

Inoculation was not without its dangers, however, and when vaccination came into vogue inoculation was abandoned for a safe method of prevention.

Vaccination in Siam.

As has been already seen, the introduction of vaccination had been attempted for several years previous to the adoption of inoculation, but it was not until the middle of January, 1840, that the first active vaccine scabs were brought to Siam by an American missionary from Boston, U.S.A., *vid* the Cape of Good Hope. On the arrival of the vaccine scabs great difficulty was experienced in obtaining subjects for vaccination, but fortunately the then Prime Minister, Somdej Ong Yai, came to the rescue. He placed 75 children at the disposal of the missionaries, and out of a total of 450 insertions three or four good pustules were found on the sixth day. From these vaccine was propagated, and over a hundred persons were vaccinated, but at the end of three months the virus lost its efficiency. To quote again:—

> Vaccination was resuscitated August, 1844, from scabs which were sent from Boston, U.S., overland, being enveloped in a little beeswax. It was propagated with unusual energy and thoroughness by the mission of the A.B.C F.M. from that time onward for a period of about ten months, when the work was again stopped for the want of fresh virus from the pustules of living subjects. About 1300 persons were thoroughly vaccinated during that period out of about 2000 subjects experimented upon.
>
> After an interval of a year or more the blessing was again brought back through the influence of an American friend sending the virus overland as before; and thus it came and departed, with intervals varying from one year to two, until Dr. Campbell, R.N., F.R.G.S.L., in giving to it more thorough attention at all times for a period of five or six years, has kept it with us much the greater part of the time, and has done great good by it. It is now a settled blessing, not only to the families of all European and American residents of Bangkok, but also to the Siamese in general, among whom it is slowly winning, week by week, a wider range of confidence and usefulness.

It was not until the year 1904 that the Siamese Government undertook the preparation of calf lymph in Bangkok. A vaccine laboratory was then opened at Si Kak Phya Sri by the Hospital Department and large quantities of calf lymph were supplied to the public. It was soon found that more commodious premises were required, and a serum and vaccine laboratory was installed at Phrapratom and work was commenced there in August, 1906 (Siamese era 125). During the year 1912 the Vaccine Laboratory was merged in the Pasteur Institute under the immediate supervision of Dr. Manaud and Dr. Robert, both of whom have been trained in the Pasteur Institute at Paris. During the past seven years 1,890,596 doses of vaccine lymph have been issued to the public, and still small-pox continues to levy a heavy toll upon the population, and more especially upon the infants of Siam. It has long been evident, therefore, that the present voluntary system of vaccination is quite inadequate as a protection against epidemics of small-pox, but before a law for compulsory vaccination could be enacted certain necessary preliminary steps had to be taken.

The establishment of a vaccine laboratory was *the first step*, and, as we have already seen, this has been an unqualified success. *The second step* was the training of a sufficient number of vaccinators. For several years past suitable young men have undergone a course of instruction with regard to small-pox, the effects of vaccination, and the methods of vaccination. These have been examined by myself or my deputy, and certificates have been granted only to those who have shown reasonable proficiency and knowledge. In addition to these, all our sanitary inspectors are trained in the art of vaccination.

A third step was to accustom the public to regular vaccination every year. In order to carry this out a beginning was made seven years ago in Bangkok. Temporary vaccination stations were established by the Local Sanitary Department in hospitals, temples, and police stations throughout the city. These were kept open during the cooler months of the year, which is the season most preferred by the Siamese for vaccination. On the first occasion 3620 vaccinations were performed. Every year since then free vaccination has been provided, not only in Bangkok, but also in the outlying suburbs and in the muangs of the Bangkok monthon. During the past seven years a total of 80,934 vaccinations have been performed by officers of the Local Sanitary Department alone.

In the other monthons of Siam—those under the Ministry of Interior—vaccination has also been carried out on a large scale. During the past 12 months a special vaccination campaign has been carried out in the interior at the instigation of His Majesty the King, who has most generously defrayed all the expenses out of His Majesty's own purse. Up to April 13th of this year this special campaign has resulted in 304,938 vaccinations during the 12 months.

So far, then, as the present generation is concerned, it may be said that a large portion of the population of Siam is for the present fairly well protected against small-pox. People in the distant parts of the interior who never heard of vaccination

before will now be able to judge of its value when the next case of small-pox develops in their midst. They are now accustomed to the operation and to the appearance of vaccinating officers in their district, so that the country may be now considered to be ready for the final step to which we have looked forward so long—i.e., a compulsory vaccination Act.

The Vaccination Law of B.E. 2456.

On Feb. 19th of this year B.E. 2456 (1914) His Majesty was graciously pleased to sanction the enactment of a vaccination law for Siam. The law was drafted by the Local Sanitary Department for application in the Bangkok province, and was revised by His Royal Highness Krom Phra Damrong, Minister of Interior, so that it is now applicable to the whole of Siam. At present it will only apply to the monthon of Bangkok, but at any time it may be proclaimed for other monthons in the interior.

A few words may now be said with regard to the chief provisions of this law. The basal idea is the desire to have every person now in the kingdom or who may enter the kingdom rendered immune to small-pox. Therefore as soon as this law comes into force every person who has not previously been successfully vaccinated must become vaccinated, unless it can be shown by a certificate from a duly qualified public vaccinator that he or she is immune to vaccination. Immunity may mean that he or she has previously suffered from small-pox or has been repeatedly vaccinated without a successful result.

Every parent or guardian of a child over one month old must take the earliest opportunity of having such child vaccinated. No definite time limit is laid down in the law, as, for example, during the first three, six, or 12 months after birth, owing to the many difficulties which might be experienced under local conditions. It will be left to the superintendent of vaccination to make such arrangements as are necessary from time to time, and to notify the time and place for vaccinations in any district. This will enable us to commence work during the cooler months of the year when vaccination is more popular in Siam. The origin of this preference is doubtless due to the fact that it was only in cool weather that vaccine lymph could be transported any appreciable distance when transport was slow and difficult. Nowadays, with railway communication, ice and thermos flasks, efficient vaccine lymph can be transported to almost every corner of the country at any time during the year.

Another point of importance in the law is the provision that the vaccinated child must be brought back to the vaccinator on the eighth day after vaccination so that the result may be verified. This will enable us to repeat the vaccination when necessary, and to check the efficiency of the lymph and the capabilities of the vaccinator. Certificates showing the result of vaccination will be granted. We look forward to the day when no child will be admitted as a scholar into any school whatever unless he can show a certificate of vaccination or of immunity from small-pox.

One of the most important clauses in the law is Clause IX. This gives the Minister power to issue a public notice enforcing vaccination or revaccination upon all the inhabitants of a district or locality within a specified time. Such power would only be taken in the possibility of small-pox becoming epidemic in such district or locality. No definite age is prescribed by this law for revaccination, but it is hoped that an addition will be made to it, definitely laying down that revaccination during the ninth year will be compulsory. The usual clauses permitting of postponement of vaccination in case of sickness of the child are included in the law.

Public vaccination will be performed free of charge at such times and places as may be notified by the superintendent of vaccination. Any person may, however, apply to a public vaccinator to perform vaccination at his residence, and in such case if the public vaccinator is employed by the Government a fee will be charged at a rate prescribed by the Minister. No restrictions are placed upon private medical practitioners as to time and place of vaccination and the fees to be charged. They will, however, require to take out licences as public vaccinators, if they wish to have their certificates recognised, for in accordance with Clause XI. the certificate of a public vaccinator shall be the legal proof of being vaccinated in accordance with the provision of the law. The reason for this is the necessity of protecting the public. No unqualified person will be recognised as a public vaccinator, and the lymph to be used must only be that which has been authorised by the Minister. The dangerous practice of inoculating with small-pox virus is now declared to be a criminal offence, and the offender will be liable to heavy penalties.

In conclusion, it may be stated that the "conscientious objector" has not been recognised in this law.

Bangkok.

PERIOSTEAL WHITLOW.

BY HUGHES R. DAVIES, M.R.C.S. ENG., L.R.C.P. LOND.,
PHYSICIAN TO THE SPANISH AND PORTUGUESE JEWS' HOSPITAL, MILE-END, E.

THE literature upon this subject appears to be scanty and unsatisfactory, and, with one exception available, that of the late H. W. Allingham, I find little that bears intimately upon the particular case I now record. From a paper read before the St. George's Hospital Hunterian Society and afterwards published[1] I make the following important excerpts, and desire to draw special attention, by italics, to the sound deduction of that lamented and brilliant surgeon, which the case I now bring before the profession amply verifies.

"The last phalanx has no real periosteum, its deficiency being supplied by the cellular tissue covering it."

And then his theory that—

"There being no periosteum to the bone its place is supplied by the soft tissues of the finger; consequently when an inflammation attacks the tissues it strangulates the vessels running in it to the bone, and so cuts off the blood-supply, and as a result of such a proceeding causes the phalanx to necrose. ..... It is well known in cases of necrosis that the new bone is formed from what remains of the periosteum, fascia, tendons, and whatever was near the original bone. *I therefore cannot see why new bone should not be formed from the cellular tissue surrounding the cavity from whence the phalanx is removed, and of course helped by the remaining epiphysis.*"

He remarks that:—

"The flexor profundus is attached to the proximal end (the epiphysis) of the terminal phalanx, the sheaths of which blend with the periosteum."

This epiphysis, Allingham declared, always remained behind after necrosis of the terminal phalanx.

[1] Medical Press, Sept. 29th, 1886.

With this short introduction I will now record my interesting experience.

On Feb. 6th, 1914, I was consulted by a man, aged 57 years, on account of a whitlow on the terminal phalanx

FIG. 1.

Radiogram taken July 4th, 1914. Shows the asymmetrical condition of the distal end of phalanx as well as the immaturity of the ossification of the new bone at the base of the phalanx.

FIG. 2.

Radiogram taken Oct. 4th, 1914. Shows a more definite ossification after three months' interval; but the deficiency in symmetry of the distal end is still evident, probably due to the intense inflammatory destruction of periosteum in the early septic stage.

of the second finger of the right hand. The patient was in a very low state of health generally, and there was tenderness in the axilla, together with marked enlargement of the cubital gland. A bootmaker by trade, it is quite possible that the examining finger may have been wounded by a septic nail in the sole of a boot, and his ill-health have been a contributory cause of the trouble. I incised the centre of suppuration at once, and advised constant boracic fomentation. Within a few hours the condition of the finger was deplorable on account of numerous discharging sinuses which appeared all over the terminal phalanx. These sinuses I broke down immediately, making one general exit for the pus. A probe revealed exposed bone, and the finger nail seemed fated; indeed, as the inflammatory condition spread rapidly towards the hand I was much tempted to advise amputation of the offending phalanx. Fortunately, I refrained, and continued expectant treatment; but the discharge was profuse and lasting.

On March 2nd, the discharge still continuing, I passed a pair of forceps and gripped the terminal phalanx, which came away easily, bearing evidence of ligamentous and tendinous attachments. Again the question arose as to the advisability of amputation. But as the nail was rehabilitating itself so wonderfully well, stiffening the terminal joint, and as the swelling of the second phalanx showed evidence of subsiding, I again refrained from operating. However, the sinus and the discharge persisting, I was compelled to believe that there still existed some bone necrosis—or that all had not come away.

On May 8th this fear proved actual fact, for two small portions of necrosed phalanx came through the sinus, which then happily closed, leaving a satisfactory finger for use. It was then that I noticed that a surprising stiffening of the flaccid phalanx was commencing, principally at the base, and a radiograph on July 4th revealed the presence of a

FIG. 3.

Sketch of necrosed phalanx removed by forceps March 2nd, 1914. In this instance apparently, in the removed necrosed phalanx, the tendon of the flexor profundus has attachment to the distal end of the phalanx, and not to the epiphysis as asserted by Allingham.

perfectly new phalanx. The upper portion of the negative plainly showed a deficiency in the symmetry of the new growth—probably the site of the recently ejected pieces of bone, which had prevented an earlier closing of the sinus by reason of their presence.

I take it that the necrosed original phalanx must have shelled out from the periosteum when seized by my forceps on March 2nd, since which date time, and hopeful patience, accomplished an apparent miracle—or the unexpected.

I present a sketch of the removed necrosed phalanx (or, according to Allingham, the phalanx *minus* the epiphyseal end), actual size, and the two radiographs, taken at the interval of exactly three months. They are worthy of study.

I venture to hope that this record will be valuable as showing what nature, guided, can perform; and also as a warning that a too-hurried use of the scalpel is not always desirable. During the course of treatment Allingham suggested that the nail, after the necrosed bone has been removed, should be strapped back to a small dorsal splint, to militate against an unsightly curving of the nail before the new phalanx has grown. In theory this sounds well, but in actual practice, as in my case, it would scarcely be feasible, since the slightest rough treatment would have torn the dead nail at once from

its bed, and the flaccid terminal would have lost a certain temporary support. Besides, the strapping would have interfered with the frequent and necessary dressing of the sinus.

Woodford Green, Essex.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Exhibition of Cases.

A MEETING of this section was held on Oct. 15th. Before opening the proceedings, Dr. J. J. PRINGLE, the President, announced that the meetings of the section would be held as usual during the forthcoming session.

The PRESIDENT showed a Lichenous Eruption in a woman 57 years of age. The lesions, which occupied large areas of the body and limbs, consisted of papules of both plane and acuminate type. He questioned as to whether the case was one of pityriasis rubra pilaris or of lichen planus, or whether it was possibly a combination of the two conditions due to some common underlying cause.—Dr. J. H. SEQUEIRA had seen a similar case.—Dr. H. G. ADAMSON and Dr. J. M. H. MACLEOD were in favour of the diagnosis of pityriasis rubra pilaris, towards which the President leaned.

Dr. W. KNOWSLEY SIBLEY brought up a boy whom he had shown at a previous meeting on account of a peculiar generalised nodular eruption; the lesions had increased in size and number and the blood now showed the characteristic changes of lymphatic leukæmia.

Dr. GRAHAM LITTLE showed (1) a case of (?) Infective Granuloma occurring on the site of an old pigmentary nævus and (2) a case of Lichen Planus.

Dr. SEQUEIRA showed: 1. A patient with an indurated, slowly growing Nodule on the chin for which he suggested the diagnosis of sarcoid, and in this the PRESIDENT concurred. 2. A case of Myxo-sarcoma of the skin of the forehead and face in a patient who had had an amputation of the foot four years previously for chondro-sarcoma of the tarsus.

Mr. H. C. SAMUEL brought up a patient with Symmetrical Pigmentation, Atrophy, and Telangiectases of the skin of the beard region resembling an X ray burn, but with absence of a history of exposure to X rays. He suggested a diagnosis of xerodermia pigmentosa commencing in an adult.—In the discussion which followed several speakers expressed the view that the patient was deliberately withholding the history of exposure to X rays.

Dr. S. E. DORE showed a case of Multiple Soft Fibromata.

Dr. ADAMSON brought a patient with peculiar Nodular Lesions about the face which gave it the leonine appearance of leprosy; there was, in addition, definite thickening of the bones of the nose. Dr. Adamson thought that the nodules might be analogous to rheumatic nodules.—The PRESIDENT stated that the case reminded him of erythema diutinum, while Dr. F. PARKES WEBER thought it a form of leontiasis ossium.

Dr. ADAMSON also showed an atypical form of Lupus Vulgaris on the Thigh, the diagnosis of which from ulcerating syphilide had been extremely difficult.

Dr. GEORGE PERNET demonstrated cultures of Favus and Ringworm.

Dr. H. MACCORMAC showed a case with Lichen Spinulosus-like Lesions which on the face gave rise to atrophic patches like lupus erythematosus; he thought it was a tuberculide.—Dr. ADAMSON agreed as to its nature.—Dr. MORELLE (Brussels) had also seen a somewhat similar case.

Mr. P. P. ATAL (for Mr. CHARLES GIBBS) showed an extensive case of Keratodermia Blennorrhagica.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Restraint in Mental Disease.

THE autumn meeting of the Midland and Northern Division of this association was held by invitation of Dr. GRAEME DICKSON at Wye House, Buxton, on Oct. 22nd. Dr. Dickson presided.

Dr. R. C. STEWART read a short paper on Restraint in Mental Disease with the object of opening up a discussion on this subject. He dealt with restraint in its widest sense, and considered briefly mechanical restraint, the use of single rooms, the question of locked doors in asylums, treatment by sedatives, &c. He was of opinion that everything that took away the feeling of restraint tended to benefit the patient.

The paper was followed by an interesting discussion, in which every member present took part, and various opinions were expressed on the numerous points raised. One speaker held very strong opinions about mechanical restraint, and thought it ought never to be used, or only in very rare cases. He considered it had a bad moral effect on the nursing staff. Seclusion appeared to him only a lesser evil, and he did not like using drugs. It had always been a difficult problem with him to decide what was the best treatment for perverse old chronic patients. A distinction was drawn between acute and chronic cases, and it was generally agreed that the difficulty of finding a suitable means of restraint lay in the case of the latter. The use of verandahs and sleeping out of doors for noisy patients were considered beneficial. The various forms of sedatives in use were referred to, and special reference was made to the use of bromides. The limitation of airing courts by unclimbable fencing and the old question of the locked asylum door were to some extent dealt with. It was suggested that too many single rooms were provided in many asylums, and that they might be better used as "privilege" rooms than for the isolation of noisy patients.

Dr. STEWART replied, after which a hearty vote of thanks was accorded to Dr. Dickson for his kind hospitality.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Oct. 23rd, Dr. David Ross, a past President, being in the chair.—Mr. Wallace C. G. Ashdowne showed: 1. A man, aged 37, admitted for treatment of femoral hernia, who showed marked signs of Acromegaly, giantism, sexual undevelopment, and prominent lower jaw being well marked. 2. A man, aged 47, with a Tumour in the left side of the pelvis, extending to the inguinal region and round to the perineum, and it could be traced through the obturator foramen. A second tumour could be felt higher up in the position of the descending colon. Some occult blood was found, and since admission 2 or 3 ounces of bright, pure blood were passed. Operation was deemed out of the question on account of the extent of the tumour. 3. A man, aged 60, who had his penis removed for Epithelioma of glans. The penis was entirely removed and the mucous membrane attached to the skin in the perineum. The man was able to micturate in comfort by means of a funnel-shaped aluminium instrument devised by himself. Spinal anæsthesia was used for the operation, as the man had aortic aneurysm. 4. A man suffering from Tertiary Syphilitic Ulceration of the Pharynx, who had one injection of neosalvarsan in addition to mercury and potassium iodide. He was improving. 5. A young man, aged 19, who injured his left hip ten years ago through a fall from a swing. No inconvenience followed for three weeks, when pain occurred on walking. Tuberculous disease of the hip was suspected and extension applied for 18 months; extension had again been used more recently. On admission to the Metropolitan Hospital it was found that the head of the femur was dislocated upwards and forwards and the leg shortened ¾ inch. The patient could walk up to three miles without pain. It was thought unnecessary to interfere. 6. A skiagram demonstrating Stones in Gall-bladder. 7. A Stone about 2 inches in length and ¾ inch in diameter found post mortem in the cystic duct of a woman who died from chronic bronchitis aged 88. The gall-bladder was quite free and there were no symptoms during life. 8. A boy, aged

6 years, from whose right ureter a calculus measuring 1 inch by ½ inch was removed. The calculus did not obstruct the passage of water, having formed a cul-de-sac. A second stone was removed later and gravel was still being passed.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on Oct. 20th at St. John's Hospital for Diseases of the Skin, Dr. J. L. Bunch being in the chair.—Dr. Bunch showed: 1. A case of Seborrhœic Dermatitis in a patient who had suffered from syphilis; the lesions showed induration, and were situated on the forehead and both auricles. 2. A case of Tertiary Syphilis in a woman; the lesions of an indurated type were present on the legs and arms, and were deeply pigmented. 3. A case of Lipomatous Tumour of the Scalp in a man aged 55; the condition had been present for 23 years, and was said to have resulted from a kick. 4. A case of Cheiro-Pompholyx in a girl aged 14; the vesicles were present on the dorsum and palms of both hands.—Dr. H. W. Barber showed a case of Abnormal Syphilide in a boy; the lesion took the form of a swelling in the left groin with an infiltration of the surrounding skin over which was distributed a vesicular eruption; there was a generalised glandular enlargement, but the Wassermann reaction was negative; the microscopic section was that of a granuloma with formation of vesicles.—Mr. T. Wilson showed a case of Scleroderma of symmetrical distribution in a woman aged 45.—Dr. Morgan Dockrell showed a case of Multiple Idiopathic Pigmentary Sarcoma in a man, aged 50, who had been having a streptococcal vaccine with good results.—Dr. Simonds Gooding showed a case of Verruca Necrogenica in a man, aged 30, who worked in a cold storage. The lesions were situated on the angle of the jaw. Also an unusual case of Pigmentation of the Skin extending from the patellæ down to the feet of three months' duration in a man who some years previously had suffered from syphilis.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The annual meeting of this society was held on Oct. 19th. The attendance was, of course, unusually small, as many members are absent on naval and military service. On the recommendation of the new President, Dr. W. H. C. Newnham, it was decided to send a message of greeting to all these absentees. The Presidential address dealt in a most interesting way with the birth and growth of gynæcology and with some of the more important aspects of that subject at the present time. Dr. Newnham laid special stress on the importance of gonorrhœa in women as a cause of invalidism and sterility. The annual report was read by Dr. J. A. Nixon—the actual secretary, Mr. A. J. M. Wright, being absent on duty with the Territorial army. The financial position of the society is unfortunately not very reassuring, but there is reason to believe that means will be found for overcoming the chief difficulties. It is, of course, impossible to make any radical alterations at the present time.

EXETER CITY ASYLUM.—At the last meeting of the Exeter city council it was decided to advertise for a medical superintendent for the asylum at a salary of £500, increasing to £600, per annum. It was proposed that the officer devote the whole of his time to the work and should not engage in any outside practice, including consultative work. This was opposed on the ground that it would be beneficial to have a mental specialist for the assistance of private medical practitioners. After a considerable discussion the proposition was carried by a large majority.

ROENTGEN SOCIETY.—A general meeting of this society will be held on Tuesday next, Nov. 3rd, at 8.15 P.M., at the Institution of Electrical Engineers, Victoria Embankment, W.C., when the President, Sir Alfred Pearce Gould, K.C.V.O., will deliver his presidential address. Members desirous of reading papers, showing new apparatus, negatives, or lantern slides are requested to communicate with the honorary secretary, Dr. Robert Knox, 7, Harley-street, W.

Reviews and Notices of Books.

Pain: its Origin, Conduction, Perception, and Diagnostic Significance.

By RICHARD J. BEHAN, M.D., formerly Associate Professor of Physical Diagnosis, Western Pennsylvania Medical College, &c. With 191 illustrations in the text and many diagnostic charts. London and New York: D. Appleton and Co. 1914. Pp. 920. Price 25*s.* net.

WE suppose that pain is a symptom more frequently complained of by a patient and more certain to lead him to consult a physician than any other that might be mentioned. Essentially subjective as it is, moreover, unless it reveals itself by unmistakable outward expression the physician is not in a position either to affirm or deny its reality. The phrase "imaginary pain" is meaningless; if a patient honestly believes he is suffering pain, he is suffering pain; and when the patient says the pain is gone, it is gone. Unless the physician is well versed in the interpretation of pain phenomena the subjective nature of the symptom of itself will not give him much aid. He must know the various causes of a given pain, the reasons for its appearance in the particular case, and the different diseases giving rise to pain of similar character and localisation ere he can determine its exact significance.

Dr. Behan's book is calculated to furnish the practitioner with a valuable aid to the interpretation of pain. The study of the phenomenon involves little less than a survey of the whole field of internal medicine, and we are not surprised that a volume of over 900 pages has been found necessary for an adequate presentation of the subject. After introductory chapters on the nature of pain, its perception, classification, intensity, and distribution, the author proceeds to examine pain as it occurs in the various forms of disease of the nervous system, bones, circulatory system, glands, eye, ear, nose, throat, chest, and so on. To the subject of pain in the abdomen and abdominal organs no fewer than 390 pages are devoted. The systematisation of the work is noteworthy; there is no confusion and but little overlapping, and with the help of an excellent index the reader will find reference to any particular point a matter of ease. There is a bibliography which must contain over 1200 references to the subject and is sure to be of value to the student.

The critical reader will find various opinions expressed to which exception might be taken, but minute criticism cannot be entered into in a brief review. Oddly enough, we can find no reference to meralgia paræsthetica (Bernhardt's disease) either in the text or in the bibliography. Taken as a whole, we do not know of any single volume which contains so much interesting and valuable clinical information on the subject, and which has an appeal as much to the specialist as to the practitioner. We should think that it will be found eminently serviceable in everyday practice.

Cancer Experimental.

Por el Dr. ANGEL H. ROFFO. Buenos Aires: Libreria y Casa Editora de A. Guidi Buffarini. Pp. 319 + xxxiv.

Dr. Roffo gives an account of the present state of our knowledge in regard to the transmissibility of cancer in animals and of his own very extensive experimental work on the subject. The book is divided into six chapters. Chapter I. gives a brief

survey of the recent work of Loeb, Reinke, Freund, Askenazi, Ehrlich, Wassermann, and others on cellular biology and pathology. The subject of the action of chemical and physico-chemical irritants, of micro-organisms and fungi, and of their possible rôle in the etiology of cancer is discussed in Chapter II. Dr. Roffo expresses his disbelief in the parasitic theory of cancer, and attaches little importance to the claims of various experimenters either to have isolated any specific cancer-producing micro-organism or to have produced true cancers by any form of injection or inoculation of such micro-organisms. In Chapter III. the author deals with the transplantation of tissues, and goes on to discuss spontaneous cancer in animals and the numerous attempts to engraft human cancer upon animals which have been made by experimenters in many different countries. He does not admit the possibility of such engrafting, and maintains that the latest experimental work demonstrates that for the successful transplantation of malignant neoplasms "normal" conditions are necessary—that is to say, the transplantation must be made on an animal of the same species.

Chapters IV. and V. are devoted to a description of the author's methods and results in the transplantation of cancerous growths and a discussion of the theory of the transmission of cancer from animal to animal by ecto- or endo-parasites, a theory of "cancer cages" on all fours with the theory of "cancer houses" which has been a good deal discussed of late. Dr. Roffo has made a considerable number of experiments with a view to testing this theory of the transmission of cancer by infection or contagion. His results have been uniformly negative, and he pronounces as follows in summing up the whole matter: "The only method by which we can transmit cancer in animals is that of transplantation of cancerous tissue in its integrity on animals belonging to the same race and species as that from which the cancerous tissue is taken. Attempts at transmission to animals of the same species made with substances extracted from a cancerous animal or from the tumour itself have been uniformly unsuccessful." The remainder of Chapter V. contains a full account of Dr. Roffo's experimental work on cancer transplantation in white rats and his conclusions concerning the various factors which favour or tend to prevent successful transplantation. He is of opinion that individual white rats may possess a spontaneous immunity to cancer, and quotes the work of Bashford and others showing that a condition of artificial or therapeutic immunity may be brought about in animals by the injection of blood from healthy animals of the same species, of emulsions of various organs, or by the transplantation and absorption of portions of malignant tumours. In each case positive results are only obtained when material from animals of the same species is used for immunising.

In the sixth and concluding chapter recent experimental work on the radio- and chemio-therapy of cancer is very fully described and discussed, especially Wassermann's work with preparations of selenium. Dr. Roffo details a series of experiments made by himself with eosin-selenium to which was added a salt of rubidium. The addition of rubidium admitted of a reduction in the dose of selenium without loss of efficacy, a very desirable object in view of the extreme toxicity of selenium and its preparations. With the eosin-selenium-rubidium he found that it was possible to arrest the development and growth of cancerous tumours in white rats and to bring about their softening and absorption. The solution acts primarily on the nucleus of the cancer cell, causing fragmentation and vacuolisation. If the tumour is small complete reabsorption may take place; if large, the animal dies poisoned by the absorption of cadaveric products.

Dr. Roffo's work is enriched by an immense number of beautifully executed coloured plates and microphotographs, and contains a very full bibliography.

Ernährung und Stoffwechselkrankheiten.

Von Professor Dr. F. UMBER, Dirigierendem Arzt der I. inneren Abteilung des städtischen Krankenhauses, Charlottenburg-Westend, Berlin. Zweite neubearbeitete Auflage, mit 10 Abbildungen, 10 schwarzen und 11 farbigen Tafeln. Berlin und Wien: Urban und Schwarzenberg. 1914. Pp. 513. Price 18 marks.

THE first edition of this treatise appeared in 1909, since which important advances have been made in the study of the metabolism in disease, more especially in relation to lipoids, the relation of internal secretions to many metabolic disturbances, such as obesity and diabetes, and the whole question of the chemistry of colloids.

The introductory chapter on nutrition and nutritive substances gives a succinct account of the requirements of nutrition in general, and a specific account of proteins, carbohydrates, fats, and mineral metabolism on the usual lines. After this, the first subject dealt with is what is to be done with patients who are "under-nourished," those whose nutrition is impaired from one cause or other, including an account of the various forms of so-called cures that are adopted, more especially in Germany. Next artificial feeding—i.e., extra-buccal or parenteric nutrition—is dealt with. This includes an account of feeding by means of a sound or œsophageal tube, rectal alimentation, and the introduction of nutriments either subcutaneously or by intravenous injection. Elaborate tables and formulæ are given of the composition of foods used in these operations. Then follows a concise chapter of about 60 pages on obesity, its causes, symptomatology, and therapeutics, illustrated by several cases that came under the author's care. The chemical aspect of the metabolism in these cases is given in very full detail. Over 250 pages are devoted to the subject of diabetes mellitus. This chapter is, in fact, an admirable monograph on this subject in all its aspects, including temporary and permanent glycosuria, its clinical forms, symptomatology, complications, prognosis, and therapeutics. Here also the author from his own varied experience is able to add much that is both interesting and practical. This chapter is well worthy of the careful attention of clinicians. The cases cited were investigated with a thoroughness that does not obtain in every hospital. A plate is added showing the condition described by von Noorden as xanthosis diabetica. Many valuable suggestions as to the treatment of the "complications" are offered. Next follows an account of the rarer forms of disturbance of carbohydrate metabolism represented by lactosuria, pentosuria—a subject brought home to English clinicians by Dr. A. E. Garrod, fructosuria, and the still rarer heptosuria. Diabetes insipidus, though strictly speaking it does not

belong to diseases of metabolism, is next dealt with, and the conclusion is arrived at that treatment is not very successful.

The remarks on gout, which form an exposition of this subject, should be read by clinicians who see much of this disease in its varied and protean forms. The reader must bring to the study of this chapter a fair knowledge of the chemistry of the purins and allied bodies. The work of Dyce Duckworth is frequently referred to, and good illustrations are given of the effects of lead and of Heberden's nodes in chronic articular rheumatism as revealed by the X rays. About 50 pages are given to the formation of calculi in the urinary passages, and the work ends with a short account of what the author calls "amino acid diathesis," including cystinuria, diaminuria, and alkaptonuria.

We can commend this thoroughly scientific and withal practical treatise to the attention of our English clinicians.

A Handbook of Fevers.

By J. CAMPBELL MCCLURE, M.D. Glasg. London: Shaw and Sons. 1914. Pp. 470, with 28 temperature charts.

THE author of this useful volume has endeavoured to produce a handbook of fevers for the use of students and general practitioners of medicine, and to make his work before all things practical in character. Detailed descriptions of the pathological anatomy are not included, epidemiology and bacteriology are touched upon with a light hand, but treatment is discussed at full length and with plenty of practical directions. The first chapter gives a brief general account of fever and its management; it is recommended that alcohol should be used, if at all, as a drug, and only to tide over certain emergencies, in quantities of from two to four ounces a day. It is of value, as Dr. McClure points out, as a hypnotic and sedative for children and adults, in addition to being notoriously a diffusible stimulant. As for drugs that reduce the temperature the author says: "It is a good rule never to give antipyretic drugs." Thirteen chapters follow on as many fevers of known bacteriology, then ten on fevers of uncertain bacteriology, scarlet fever, measles, German measles, small-pox, chicken-pox, typhus, mumps, rheumatic fever, yellow fever, and whooping-cough. At the end of the book beri-beri, pellagra, and the treatment of tuberculosis with Mehnarto's contratoxin are considered, and there is a good index.

It is perhaps surprising that no room has been found in the volume for acute anterior poliomyelitis, an endemic fever of which small epidemics have occurred in England during the last few years. The account of epidemic cerebro-spinal meningitis, excellent as it is, would gain by more up-to-date references to the extensive literature of the subject, particularly to that hailing from America. For the rest, we have nothing but praise. The book is well written, comprehensive, and particularly thorough in its description of the management of cases.

LIBRARY TABLE.

A Short History of Germany and Her Colonies. By WALTER ALISON PHILLIPS, JAMES WYCLIFFE HEADLAM, and ARTHUR WILLIAM HOLLAND. Pp. 174. *A Short History of France.* By PAUL WIRIATH and J. E. C. BODLEY. Pp. 224. *Belgium, Italy, and Switzerland.* By the Rev. G. EDMUNDSON, H. WICKHAM STEED, and the Rev. W. A. B. COOLIDGE. Pp. 202. *A Short History of Austria-Hungary and Poland.* By H. WICKHAM STEED, WALTER ALISON PHILLIPS, and DAVID HANNAY. Pp. 170. *A Short History of Russia and the Balkan States.* By Sir DONALD MACKENZIE WALLACE, Prince KROPOTKIN, C. MIJATOVICH, and J. D. BOURCHIER. Pp. 186. *The Wars of the Nineteenth Century.* By Major-General C. W. ROBINSON, C.B., Colonel MAUDE, C. B., Lieutenant-Colonel J. H. VERRINDER CROWE, Captain C. F. ATKINSON, and others. Pp. 260. London: The Encyclopædia Britannica Company, Limited. 1914. Price 2*s.* 6*d.* net each volume.—The above volumes form a series of six handbooks covering the history, physical features, population, communications, industry and commerce, education, government, military and naval resources, and other interesting information concerning the countries that are now almost monopolising the attention of the entire world in consequence of the European war. The volumes consist of the various authoritative articles from the eleventh edition of the "Encyclopædia Britannica," arranged in a uniform sequence in the different volumes so as to form corresponding chapters. The last of the series contains full accounts of the political bearings, the course and results of the French Revolutionary War, the Napoleonic Campaigns, the Peninsular War, the Waterloo Campaign 1815, the Italian Wars 1848-70, the Schleswig-Holstein Question, the Seven Weeks (Austro-Prussian) War 1866, the Franco-German War, the Russo-Turkish War, the Servo-Bulgarian War, the Spanish-American War, the South African War, the Russo-Japanese War, the Turco-Italian War, and the Balkan War of 1912. It was a happy idea to collect into separate handy volumes, at the moderate price of 2*s.* 6*d.* each, or 12*s.* 6*d.* the set of six, all the carefully compiled and accurate information scattered through the pages of the "Encyclopædia Britannica." Photographs embellish the books, and special value will attach to the views of architectural masterpieces and historic shrines hitherto the glory of the civilised world, but now laid in ruins.

Mechano-therapeutics in General Practice. By G. DE SWIETOCHOWSKI, M.D. Munich, M.R.C.S. Eng., Clinical Assistant, Electrical and Massage Department, King's College Hospital. Illustrated. London: H. K. Lewis. 1914. Pp. 141. Price 4*s.* net.—This little book is intended to be a guide to the performance of massage in cases in general practice. It contains a great deal of useful information and sensible advice. There is no doubt that massage is still largely neglected by general practitioners, and that many excellent results could be obtained by its use in suitable cases if medical men would take up this work for themselves and rely less on the masseur. The subject is classified in the usual way into surgical, medical, and special sections, injuries and diseases being taken in regional order. Used with caution and with a knowledge of what is to be achieved there is no doubt that massage is most successful in the early treatment of fractures. The various movements to be used in these cases are clearly and briefly described and figured, and the progress of his own cases as described reflects credit on the skill of the author. To turn the crippled hand of a girl with Volkmann's ischæmic paralysis into a hand that can sew and darn after treatment for a year and a half is no mean achievement. Photographs of this case are given. Like most writers on massage, the author

is too sanguine as to its curative powers in scoliosis, a deformity which he declares can be altogether prevented by care in detection and treatment. This is clearly the language of enthusiasm and haste. Speaking generally, we are inclined to regard the writer higher as a practical man than a theorist. More authoritative guidance than is here to be found will be required by medical men seeking to arrive at a decision as to the employment of massage in their more serious medical cases and the time at which it should be begun; but for the practice of massage they will find the book very instructive.

The Pharmacy Handbook. By F. W. CROSSLEY-HOLLAND. London: Henry Frowde and Hodder and Stoughton. 1914. Pp. 224. Price 6s.—This book is likely to be of less use to medical practitioners than to pharmacists; its intention is to provide the latter with useful information other than that which is obviously part of the knowledge of every pharmacist.

Tropical Hygiene for Anglo-Indians and Indians. By Sir C. PARDEY LUKIS, K.C.S.I., Director-General of the Indian Medical Service, and Major R. J. BLACKHAM, C.I.E., R.A.M.C., Hon. Surgeon to the Viceroy of India. Second edition. Illustrated. Calcutta and Simla: Thacker, Spink, and Co. 1914. Pp. 261. Price 3 rupees.—The first edition of this little book was published in 1911, and its immediate reception was so favourable that it was quickly sold out and a new edition became urgently called for. The authors have now thoroughly revised their work and brought it up to date; they have also largely rewritten a good deal of it. Instead of 10 chapters there are now 12, the two additional chapters dealing respectively with the disposal of the dead in hot countries and with the climate of the tropics. The other subjects considered and explained are the communicable diseases of the tropics, air and ventilation in hot countries, water and water-supplies, food, clothing, houses and their surroundings, the disposal of refuse, insects and disease, and disinfectants and disinfection in the tropics. The volume was originally intended to serve as a manual for the benefit of candidates for the senior certificate in Indian home hygiene of the St. John Ambulance Association, a body which has taken a large part in popular instruction in health matters, and whose certificate can now be obtained after a special curriculum adapted for the sanitary needs of India. The aim of the work is at bottom to spread among laymen the knowledge of domestic hygiene in India, where hitherto it has, unfortunately, not received sufficient attention, and to point out the chief dangers to which residents in India are exposed as well as the best means to be taken for avoiding these dangers. The high official positions held by the two collaborating authors of this volume will give great weight to their teaching, which will produce valuable results in the near future. The book covers a very wide field; it is therefore the more remarkable to find how much sound information and good advice have been concentrated in so small a space. The style of the book is concise and clear, maintaining well the interest of the reader; it cannot, in our opinion, fail to prove of great service, not only to the student of elementary hygiene, but to all Anglo-Indians and the educated classes of the native populations, if they will but give it the study which it deserves.

The Pocket Formulary for the Treatment of Disease in Children. By LUDWIG FREYBERGER, M.D. Vienna. Fourth edition. London: W. Heinemann. 1914. Pp. 260. Price 7s. 6d.—This little volume contains a great deal of information in a very small space. It affords a full list of all the drugs commonly used in the treatment of children, with their properties, uses, therapeutic action, and doses. In addition there is a therapeutic index at the end of the book. The disadvantage of all books of this kind is that in the plethora of drugs recommended in alphabetical order for any one particular disease it is difficult to make a suitable selection; for instance, in the treatment of typhoid fever 29 different drugs are recommended.

JOURNALS AND MAGAZINES.

The British Journal of Surgery. Vol. II., No. 6. October, 1914.—This number opens with a short note on James Syme, accompanied by a portrait—Mr. Corner describes the method of exploring the knee-joint by a splitting of the patella vertically. The author claims for this operation that it gives a complete view of the joint without weakening it, and allows operations upon the crucial ligaments.—A valuable collective report upon the operation of the resection of the posterior nerve roots is given by various authors with notes of 58 cases, the majority of which have not been published before. The conclusions arrived at are: that the operation is of permanent value for the abolition of spasm in paralysis of cerebral origin and a few classes of spinal origin, but that there are many limitations to its usefulness in these cases, particularly mental deficiency; that it is only of very occasional service in the cure of pain; that it has given good and lasting results in the cure of the gastric crises of tabes.—Mr. C. A. Pannett in an interesting experimental investigation about anoci-association shows under what conditions sensory shock-producing stimuli in the abdomen can be prevented from reaching the nerve centres by local anæsthesia.—A short epitome of contemporary Italian surgery is contributed by Professor Bastianelli, of Rome.—A very instructive article by Mr. Wilfred Trotter deals with chronic subdural hæmorrhage resulting from comparatively trivial injuries. He shows, too, how this condition may be recognised and how timely recognition may render curative operations possible.—Mr. Ernest Miles describes in detail, with numerous illustrations, the technique of the abdomino-perineal resection of the rectum for cancer.—A carefully worked out thesis, illustrated by many sections, on the etiology of appendicitis and gastric ulcer is given by Mr. R. G. P. Lansdown and Mr. Scott Williamson, who believe there are certain peculiarities of lymphoid tissue which the pyloric, duodenal, and appendical regions share in common, and that both gastric and duodenal ulcers and appendicitis are due to primary lymphoid infection, the ulceration of the mucous membrane being secondary.—Descriptions of visits to the clinics of Sir Watson Cheyne in London and von Eiselsberg in Vienna are full of technical and personal interest. There are also a number of cases of interest or rarity described and one instructive mistake.

The British Journal of Tuberculosis. Edited by T. N. KELYNACK.—In the October issue Professor Sheridan Delépine gives the results of the information collected by him since 1896 in connexion with the administrative work carried out in Manchester[1] and elsewhere in relation to tuberculous milk. By an analysis of statistics relating to the tuberculosis mortality in comparison with the efforts made for the reduction of tuberculous milk he is led to the conclusion that although there is not complete agreement in the results obtained by various observers as to the exact amount of human tuberculosis attributable to the consumption of tuberculous cow's milk, there is clear and cumulative evidence that cow's milk plays a very important part in the production of infantile tuberculosis in England and Scotland. Discussing surgical tuberculosis in childhood, Mr. Lawford Knaggs lays great stress upon rest in joint tuberculosis as the one agent that has stood the test of time. He does not, of course, neglect other methods, but urges that the responsibility of laying out money subscribed for

[1] See THE LANCET, March 25th, 1912, p. 1424.

hospital purposes is great, and that if it is spent in exploiting new methods of treatment it may very soon be found that it has been thrown away. He suggests that it would be wiser and more economical to proceed on old lines that have been proved to be sound, which description undoubtedly applies to the treatment of hip-joint disease by rest and extension. The Arneth Count in Pulmonary Tuberculosis, by Dr. W. E. Cooke; the Albumin Reaction of the Sputum in Pulmonary Tuberculosis, by Dr. E. G. Glover; and an account of the Tuberculosis Conference at Leeds, by Dr. Herbert de Carle Woodcock, are the other articles.

The British Review. Edited by RICHARD JOHNSON WALKER.—The stupendous war forms the staple of this periodical for October. Major G. W. Redway begins a serial article on the True Story of the War, briefly skimming the causes and elucidating the principles that compelled our intervention. He discusses the possible strategic ideas in the minds of the respective commanders, and describes the operations to the point at which General Joffre resumed the offensive that culminated in the battle of the Aisne. Paul Parsy describes the early stages of mobilisation in France. Bruce Mitford traces the relation of the Japanese to the war and deplores the suspicion and enmity which Japanese actions have encountered, and holds that Japan by her magnanimity and self-restraint has dealt a heavy blow at that grim spectre of the future world—race prejudice. The hope for Poland is laid bare by R. S. Latimer, who maintains that Poland's ideals are insured to her by the Treaty of Vienna (1815), which hitherto has been kept not at all by Germany, under whose influence Russia also has for long attempted to stamp out Polish national aspirations. Austria has not departed so widely from the principles of policy and justice, but has meted out not a little kindly treatment in her share of the divided nationality. The recent proclamation on the part of Russia, however, has renewed hope for Poland, and Mr. Latimer urges that "here to-day is a great opportunity for the mightiest emperor of the three to keep the pledge given by his ancestor, and in so doing to win to himself the allegiance of a great nation and the admiration of the world." W. M. J. Williams, writing on the financing of a great war, concludes that the field of taxation must not be widened. Property is already overtaxed, only drink and tobacco can bear further imposts, and with some aid from these income-tax will have to bear the burden. Demetrius C. Boulger records some personal war experiences. Among other articles, Hilaire Belloc reviews the reign of Pius X., the note of which was simplicity, consisting in reassertion of clear-cut principles as the rule of conduct, political as well as personal, in opposition to expediency, and ventures the prophecy that when the war is over and the liquidation of Europe is concluded his action will be seen to have been prophetic. The editor reviews the Papacy's nearly 2000 years' experience of wars, and sees in Benedict XV. an adequate minister to the needs of a new era. "E. C. K." urges that the people of Ireland must develop on their own lines, and the innate love of "glory," which they share with the French, seems to him one of the strongest reasons for instituting a national system of self government. Verse, much of it on patriotic themes, is abundantly represented in this number.

The North American Review. Edited by GEORGE HARVEY.—The October issue divides its contents into two parts, of which the first five articles deal with various aspects of the war. The remainder confines itself to the æsthetic side of life. Mr. William Elliot Griffis criticises his country's attitude towards Japan, Sir A. Quiller Couch examines the workmanship of Macbeth, and Mr. David A. Modell reviews the domestic life of Tolstoy as laid bare in his letters to his wife, pointing out that the letters afford yet another illustration of the fact that great men are apt to lead unhappy married lives. The matter with the poets, according to Mr. Robert Haven Schauffler, who inquires why the present renaissance of the poetry lover has failed as yet to bring with it a renaissance of the American poet, is that "the poet is tired." Great art demands fulness of life, and this has been unattainable because "we have been unwilling to let our poets live while they worked for us." He suggests the establishment of fellowships of creative poetry. In Life and Mind, Mr. John Burroughs examines critically the mechanistic conception of life, and makes out a strong case for the fact "that you are you and I am I, and that human life and personality can never be fully explained or accounted for in terms of the material forces."

The Journal of the East Africa and Uganda Natural History Society contains in the August issue (Vol. IV., No. 8. London: Longmans, Green, and Co. Price 4s.) several articles of interest to naturalists, including the African brown-bellied kingfisher, of which there is a coloured plate, by Dr. V. G. L. van Someren; Game Animals of Jubuland, by Mr. I. N. Dracopoli; and Fishes in British East Africa and Uganda, by Mr. F. G. Afialo. Dr. Wynstone-Waters's article on the Organic Cell is continued. The doubt with which stories unsupported by evidence of the discovery of new animals are received sometimes proves to be wrong, the platypus and the okapi being cases in point, and it may be that the weird animal which has been named chemosit or nandi bear may prove eventually to have an actual existence. Anyway, Mr. A. Blaney Percival's short note on the beast is interesting. Stories in regard to the animal do not agree except in this, that it is fairly large, stands on its hind legs, is nocturnal, very fierce, and kills men or animals—by no means a scientific or illuminating description. Mr. C. W. Hobley has already in this journal referred to the "unknown," and gave a diagram of its supposed foot in an article on Some Unidentified Beasts, while Mr. G. W. Hickes has also mentioned an unknown beast seen on the Magadi railway which may or may not have been the elusive quadruped in question.

New Inventions.

AN IMPROVED TOURNIQUET: THE WESTERN.

FOR some time past in connexion with ambulance work the need has been felt for a more efficient form of tourniquet than those in general use. In the case of the indiarubber form the rubber soon perishes, and when the instrument is applied the circulation of the limb is completely restricted. In the pad-and-strap tourniquet there are three distinct weaknesses: (1) When the strap is tightened the pad is pulled out of place; (2) owing to the means to secure the appliance being a spiked buckle some relaxation of the band takes place and it is difficult to remove or adjust; and (3) the strap, being pierced by the buckle spikes, is weakened and soon wears out. The instrument here figured overcomes all these drawbacks and possesses many advantages. It consists of a pad or block of vulcanite (or other suitable material) which is affixed to a metal plate, one end of which forms an "eye" and the other an open hook. To the eye is permanently attached a special form of spikeless buckle (known as the "Bennett"), and a similar detachable buckle engages over the hook of the metal plate when the instrument is in use.

Through the two runs the strap of the tourniquet, which consists of two lengths of webbing placed one over the other and stitched across at frequent intervals, the ends of the webbing being thickened so that it cannot be detached from the buckles. To apply the tourniquet the loose clip is removed from the hook, the block is placed in position, the strap is passed round the limb, and the loose clip replaced over the hook. Pressure is then exerted on both ends of the strap, and the block is forced directly downwards, the strap automatically holding at the point of greatest pressure. To remove the tourniquet the release tongues are pulled with an upward motion, when pressure is instantaneously relaxed. An additional lock is provided for use in cases in which a patient may have to be transported a considerable distance.

Messrs. Hatrick and Co., 70, St. John-street, Clerkenwell, are the makers.

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THE LANCET.

LONDON: SATURDAY, OCTOBER 31, 1914.

Services by Medical Officers of Health to Military Authorities.

As a result of the issue of the War Office and Local Government Board directions, to which we referred last week, medical officers of health have considered the position which they are asked by the Government to occupy in relation to troops stationed in their areas. The duties enumerated are at first sight rather formidable. They cover such matters as the distribution of troops in billets, the sanitation of camps, the sufficiency and purity of water-supplies, and provision for cases of infectious disease among the military population. Medical officers of health who have in the past paid little attention to military hygiene may well at the beginning feel doubtful both of the value of the assistance which they can give, and of the reception which any proposals which they make may receive from commanding officers or from their colleagues on the Army Medical Staff. With regard to the latter situation cases have already been brought to our notice in which the medical officer of health has not found his appearance on the scene or his offers of assistance well received. All such difficulties, however, should now be effectively removed by the new official directions. The question whether the medical officer of health has any right of entry under Public Health Acts on military premises does not now arise. He is officially regarded as a local expert officer on the spot whose assistance is to be invited by the military, and he is given authority to report serious conditions affecting the health of the troops in his district, both to the War Office and to the Local Government Board.

As to the work required, medical officers of health are unlikely to go far wrong if they apply to the new environment the general principles of their civil action. Military conditions do not affect the underlying facts of infection and ill-health resulting from overcrowding, accumulations of refuse, excretal nuisances, presence of flies and vermin, or absence of general cleanliness. The remedy may be somewhat different in application, and standards may in some cases have to be more lenient and in others more strict. Sufficient guide on the orthodox views in these matters is, however, to hand in the admirable little manual of military hygiene issued by the War Office, and local circumstances will often enable new departures to be made with excellent results, as may already be seen in the arrangements for water-supply, latrines, and scavenging which have been extemporised in some of the provincial towns which are now occupied by billeted troops. One of the most important of the duties which the Local Government Board has placed on the medical officer of health is that of ascertaining and bringing to the notice of the local authority, for immediate action, any public services which that authority can render to the troops. Many such services at once suggest themselves: opening public baths, giving facilities for washing clothes, lending municipal clinics or dispensaries for the examination of recruits, providing evening recreation rooms, disinfecting clothing and blankets, and similar matters. The occasion should be taken also to remedy any defects in the ordinary sanitary services of the district and to coöperate with the military authorities in preventing the use of unsuitable or dangerous quarters for billeting. Isolation hospital accommodation should be seen to, and if necessary enlarged, and bakehouses, slaughter-houses, or other places used for the preparation of food for the troops should receive special attention.

In many of the important centres where troops are aggregated the new directions will be almost superfluous. Much of the work specified was begun at once after the outbreak of the war, without waiting for official warrant, and we believe that the local sanitary authorities have seldom been appealed to in vain for any practical assistance which they can give in the national emergency. It should be recognised also that in many instances, as in London, Territorial troops have had the advantage of including in their organisation medical officers of health and others who, as sanitary officers for divisions or smaller units, have themselves since their mobilisation taken such vigorous measures for the health of the soldiers under their charge as to leave very little to be supplemented by work under the new scheme. The latter, if we properly understand its intention, does not in any way remove the responsibility of the military medical service in matters affecting the health of the troops, and much military hygiene is work which cannot be done on outside advice, however good. The education of the individual soldier in the proper care of his person and environment in particular is daily work for the execution of which the army must look to its own medical service. The new troops have had to draw for their medical officers on men untrained in military work, and it is of first importance that they, like their colleagues in the regular service, should devote themselves not only to the care of sick and wounded, but also to the study of all matters affecting the daily life of the soldier, and be ready with confidence to give advice to all ranks which make for health and efficiency, and be fearless in forwarding to higher authority reports of deficiencies which in their opinion ought to be remedied. With information thus coming to army headquarters from both the military and civil sides, with local coöperation and goodwill in every locality

where troops are quartered, and with increasing appreciation by combatant officers of the importance of health considerations, the outlook will be satisfactory if the individuals play their allotted part. And this we make no doubt they will do. The Sanitary Committee now appointed by the War Office should have its task appreciably lightened by the existence of the new scheme, the working of which can be periodically watched and supplemented under the advice of the Committee as experience is gained. The personnel of this Committee is announced on page 1069.

The Graduated Labour Treatment of Pulmonary Tuberculosis.

WE have received a copy of an interesting report on the after-histories of patients discharged from the Brompton Hospital Sanatorium at Frimley in Surrey during the years 1905–1910. The report has been issued by four of the physicians to the Brompton Hospital who are or have been visiting physicians to the sanatorium—Dr. S. H. HABERSHON, Dr. F. J. WETHERED, Dr. P. HORTON-SMITH HARTLEY, and Dr. J. J. PERKINS, and the medical superintendent of the sanatorium, Dr. W. O. MEEK. The sanatorium was formally opened on June 25th, 1904, but it was not until the following year that the institution was in full working order. The statistics accordingly refer to the period March 8th, 1905, to Dec. 31st, 1910. The sanatorium was originally intended for 100 patients, but in 1908 the beds were increased in number, and at the present time there is accommodation for 148 patients In arriving at a conclusion as to the result of the treatment carried out at Frimley it is important to bear certain points in mind. The great majority of the patients have passed through the wards of the Brompton Hospital in London, whence if found suitable after a period of observation they have been drafted on to the sanatorium. The patients were not taken at random, but were carefully selected, only those patients being chosen who were free from fever or other serious constitutional symptoms, who possessed considerable vitality, and had already shown indications of a favourable response to treatment. So far as possible also patients with signs of limited disease were selected, although it was soon found that patients with extensive disease, but of a quiescent type, often did remarkably well. In other words, more importance lies in whether auto-inoculation is, or is not, easily induced than in the pathological stage of the disease. Only those individuals should be placed on graduated labour who can take a fair amount of exercise without exciting undue febrile response. Another point on which the physicians at Brompton lay stress is the likelihood of the patient obtaining work upon his discharge from the institution, and it early became apparent that if the patient had no work to return to after leaving the sanatorium he would almost certainly relapse quickly through inability to obtain adequate nourishment. In the introduction to the report attention is rightly drawn to the conditions under which patients are sent to Frimley, for, as the physicians remark, it would be a mistake to suppose that the results obtained there in regard to the arrest of the disease and prolongation of life give any accurate index of the economic results which might be expected if all cases of tuberculosis of the lungs were sent haphazard to sanatoriums. We are glad to see stress laid on this point; emphasis must be given to the fact that graduated labour treatment is only suitable for a certain class of case, and would be the reverse of beneficial if all patients suffering from pulmonary tuberculosis were submitted to the régime. In the early days of sanatorium treatment the idea arose that it was suitable for every variety and stage of the disease, hence much disappointment arose, and the methods adopted at Frimley would suffer a like disrepute if a careful selection was not made.

The report deals with the details of the treatment which are now known to the profession at large. Elaborate statistical tables, admirably drawn out, are given to demonstrate the results achieved. The total number of patients discharged during the six years covered by the report was 1892. The patients were communicated with at periodical intervals after they were discharged, and the results are based on the after-histories of 1674 of these cases, the remaining 218 being accounted for by 64 who only remained for a few days in the sanatorium, 91 in whom a diagnosis of pulmonary tuberculosis could not definitely be made, 19 who had suffered from pleurisy with effusion but without definite evidence of pulmonary involvement, 24 admitted for a second period of treatment, and 10 who died in the sanatorium. The object of the report is stated to be to show the proportion of the 1674 patients who during each year following their discharge have been (*a*) well and able to work; (*b*) alive; (*c*) known to be dead; and (*d*) lost sight of. Further, in order to render the statistics more reliable in each year the patients in whose sputum acid-fast bacilli were found are tabulated separately from those in whose sputum such bacilli were not present. This is a course highly to be commended, for a considerable number of physicians who have had a large experience in that disease are convinced that the only pathognomonic test for pulmonary tuberculosis is the demonstration of tubercle bacilli in the sputum. We strongly support those authorities who maintain that the results of any supposed treatment for the disease based upon cases in which the bacilli have not been so found are too fallacious to be of any value. The cases are classified from the clinical aspect, according to the number of lobes in which physical signs of disease were found on or shortly after their admission to the sanatorium. The statistical tables are divided into three series. The first deals

with the after-histories of the 1674 patients who were treated at the sanatorium and discharged during the period March 8th, 1905, to Dec. 31st, 1910. The cases discharged in each year are divided into four classes: (1) and (2) "Full-time" cases, in which respectively tubercle bacilli were and were not found in the sputum; and (3) and (4) "short-time" cases under similar circumstances. In Series II. the after-histories of the "full-time" patients are further analysed in the light of the "immediate result" of treatment at the sanatorium. The third series of tables was compiled to show the after-histories of all the "full-time" cases of pulmonary tuberculosis which could be traced for a period of (*a*) five years and (*b*) four years subsequent to discharge.

Some remarks on the third series will indicate results which have been achieved. Unfortunately, a large number of cases have been lost sight of, which to some extent renders the statistics of less value than they otherwise would be, but to obviate this drawback untraced cases are eliminated in working out the percentage of results obtained. One table shows the condition of "full time" cases (tubercle bacilli present) discharged during 1905–6–7 at the end of each of the five years subsequent to discharge. During that period 292 patients were discharged; at the end of the first year 175 (65·8 per cent.) were well and able to work, 65 (24·4 per cent.) were alive, 26 (9·8 per cent.) were dead, and 26 had been lost sight of. In a similar manner statistics are given of the next three years, each year the number of cases lost sight of being deducted. Then finally the condition of 227 cases at the end of the fifth year following their discharge is given, with the result that 38·8 per cent. were still well and able to work, 14·8 per cent. were alive, and 46·6 per cent. were dead. On the other hand, with those cases in which tubercle bacilli were not found, at the end of five years 74·3 per cent. were well and able to work, 10·3 per cent. were alive, and 15·4 were dead. Taking *all* the "full time" cases together at the end of the five years 48·4 per cent. were able to work, 13·6 per cent. were alive, and 38 per cent. were dead. Now in order that any statistics of the results of treatment at one sanatorium may be satisfactorily compared with those of another institution it is essential that the figures should have been collected in exactly the same way, and that the social condition of patients, the manner in which they were selected, and their subsequent modes of life should be similar. These factors are extremely difficult to fulfil. In the instance of the Frimley Sanatorium the complete manner in which the tables are drawn up compares very favourably with the statistics of other sanatoriums in which patients are mainly those of the working classes, and we believe that the results must be taken as distinctly good. In the statistics of the German sanatoriums under the provision of the Invalidity Insurance Law during the years 1904 to 1908, at the end of five years after discharge 44 per cent. of the male and 51 per cent. of the female patients were capable of working. No distinction, however, is drawn between those cases in which tubercle bacilli were found and those in which they were not found.

In reviewing the report as a whole we consider that the methods adopted and the way in which the figures are arranged would form a good practical standard on which the reports of other sanatoriums and institutions might be drawn up, for it is only by means of uniformity that any useful comparison can be made as regards the various therapeutical measures which are adopted for the treatment of pulmonary tuberculosis.

Annotations.

"Ne quid nimis.

THE NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.

THE inaugural meeting of the National Council for Combating Venereal Diseases will be held at the house of the Royal Society of Medicine on Nov. 11th at 4 P.M. It has been brought to the notice of the organising committee that there is an immediate need to call into being this National Council now during the continuance of the war. The provisional honorary secretaries of the committee in a communication to THE LANCET say:—"The abnormal state of the country gives rise to conditions which demand to be dealt with. There is great need of disseminating sound knowledge on this subject among the men collected together in large camps, so as to safeguard both their interests and those of the women in the vicinities. Furthermore, there is need to anticipate, and, if possible, to check that exacerbation of venereal disease which always follows in the wake of a great war. There is already occasion for action in the first of these directions; it is not yet known what other demands may occur. It is therefore felt that the National Council ought to be in a position to make an immediate response to any call that may be made to aid or supplement the efforts of those in authority. It is, therefore, because of the urgent need during war time that the inaugural meeting is now being summoned, and the organisers hope that it will meet with support." We cordially agree with the view that the time for educating the public as to the need for combating venereal disease and the methods which should be employed is exactly now. From a small and local inquiry which we made ourselves a fortnight ago into the prevalence of gonorrhœa among the recruits we received certain evidence that the existing condition of the country is favourable to the spread of venereal disease, though from several of the localities where we sought special information the answers were quite reassuring. In this connexion a well-informed correspondent suggests to us that attention should not be wholly focused on the new recruits, and that the very considerable temptation which lies round the path of the convalescent wounded must not be forgotten.

THE WAR AND THE CRUDE DRUG INDUSTRY.

THE likelihood of a scarcity in certain drugs as a result of the war is not confined to the synthetic products which have hitherto mostly emanated from German laboratories. English pharmacists have hitherto been to a very large extent dependent upon imported supplies also of crude vegetable drugs—aconite, belladonna, chamomile, digitalis, hydrastis, hyoscyamus, and valerian may be cited as examples. Yet some of these grow naturally in various parts of our islands, and probably those that do not could be cultivated. Centuries ago there were many "physic gardens" in England, chiefly in connexion with monastic houses or with the establishments of noblemen. Drug farms exist to-day in several parts of this country, but for the most part the Central European countries—Germany, Austria, and Switzerland—have sent us raw material for our vegetable medicinal preparations. The Board of Agriculture and Fisheries has now issued a very timely leaflet (No. 288) on the "Cultivation and Collection of Medicinal Plants in England," and instructions are given for the farming of such plants as an industry. It is pointed out that already since the war the price of belladonna has risen more than 100 per cent., and of many other drugs to a lesser degree. Owing, however, to the limited outlet for drugs overloading of the market is an easy matter, and coöperation between the producer and the manufacturer is counselled, as has already been advantageously practised in cinchona bark production. Of course, for those who intend to embark on the pursuit, a drying plant heated artificially is essential. The south of England is said to be especially suitable for drug-growing. It is suggested in the leaflet that a considerable demand will occur next year for many of the commoner British wild plants and other medicinal herbs that grow wild in the country, and this may open up a prospect for herb collectors, to whom farmers and landed proprietors might be induced to give access to their fields. This, of course, would only be a temporary measure that would help to meet the coming deficiency and incidentally give employment at rates more remunerative than hitherto to a certain number of competent persons; but there is every reason why in this direction, as well as in others, the opportunity afforded by the war to render ourselves less dependent upon Austria and Germany and to supply our own drug markets with home-grown products should be taken advantage of, and ultimately foreign markets might be created.

THE ATLANTIC WINTER RESORTS.

IN a generous response to an appeal by Dr. Michael C. Grabham, of Madeira (who writes from the Union Club in London), on behalf of officers invalided during the present war, the Government of Portugal have consented to make an important concession in the administration of their fiscal system. Orders have been issued which will enable visitors to enter the country freely with all their requirements for domestic use, provided that there is no intention to trade or to introduce spirits or tobacco into the country. It is obvious that the Portuguese realise that the south of Europe is not accessible just now, and that the opportunity of popularising their attractive resorts at the mouth of the Tagus—namely, Mont Estoril and Cascaes—should not be lost, and also that it would be politic to make their island of Madeira freely available to those of our sick and wounded whose convalescence may be furthered by genial climatic conditions. All these Portuguese resorts are now well equipped with good water and the food-supply is abundant, while the Union Castle and Royal Mail lines of steamers offer excellent means of communication. We hope Dr. Grabham may succeed in obtaining from the Red Cross and other funds assistance in mitigating the cost of travelling and hotel life for those who have lost their health in the service of our country, and who may wish to take advantage of the practical abatements in their favour offered by Portugal.

THE DIAGNOSIS OF PANCREATIC DISEASE.

THERE are wide variations in the character of symptoms referable to disturbed functions of the pancreas, and as long as knowledge of its purely physiological actions is incomplete it is difficult to trace to abnormal activity of this gland such general conditions. Definite signs due to the pancreas have, however, been recognised: the "acute" abdomen (hæmorrhagic pancreatitis) in some cases; in others, general wasting or deep-seated epigastric pain or "massive stools" or jaundice is noted. Diabetes, too, claims a relationship to the pancreas. Careful investigations of those functions of the gland more easily detected, together with clinical signs, are, however, accumulating evidence suggestive of glandular responsibility, and a valuable critical review of our present means of estimating pancreatic disturbance has been given by Dr. A. F. S. Sladden in the *Quarterly Journal of Medicine* (1914, vol. vii., p. 455). In the first place it may be said that no single test can alone afford infallible evidence. Several are necessary, but that this should be so is no proof that such collective data are not valuable, and it appears that reasonable conclusions may be reached by these means. The tests employed are many. They are directed to two ends: tests of external secretion and tests dependent upon other functions of the pancreas. The former concern the intestinal tract; the latter such investigations as the diastatic ferments in the urine, glycosuria, actual or potential, and adrenalin mydriasis. Each test has been reviewed by this writer in turn, and his conclusions are worth recording in a few words. Four tests aim at investigating the pancreatic juice in the neighbourhood of the duodenum. The presence or absence of trypsin (the latter signifying pancreatic disease) is detected by means of the oil-test breakfast, which causes a regurgitation of duodenal contents through the pylorus, thus enabling them to be examined—"worth an extensive trial." Duodenal intubation "from the standpoint of the practical clinician ..... open to serious objections." Sahli's test, the principle of which consists in giving a capsule containing a substance demonstrable on general absorption, the capsule being digested mainly by the pancreatic juice, and the rapidity of absorption indicating the efficiency of the gland—"value of the test very doubtful." Schmidt's beef-cube test: "evidence for reliability ..... not very convincing." Examination of fæces presents more favourable opportunities. Excess of nitrogen, "azotorrhœa," is "certainly a common feature of pancreatic disease ..... pancreatic insufficiency is the most usual cause ....." The test is, however, rather laborious. Creatorrhœa, the presence in the fæces of undigested muscle fibres, is a condition which is described as "not free from fallacies,"

though of "great positive significance if these are excluded." Steatorrhœa, the passage of fat in the stools, is recognisable as excessive only by microscopic aid, and chemical analysis is held to be more satisfactory. This subject is entered into fully. Amongst the conclusions as to its value it is stated that "in general, if the total fat be much over 30 per cent. of the dried fæces one suspects pancreatic insufficiency, biliary insufficiency, or intestinal anomalies of absorption or peristalsis." Glycosuria, "in conjunction with other signs, a lowered glucose tolerance lays the gland under grave suspicion, although absence ..... of alimentary glycosuria affords no proof of a healthy pancreas." Against the Cammidge test "the balance of opinion appears to be adverse," but the author thinks that it may lead to further knowledge. Of excess of diastase in the urine he writes: "There appears to be no doubt that a high diastatic value of the urine offers considerable presumptive evidence in favour of pancreatic disease, whilst a low or normal value, provided there is no renal disease, indicates a healthy pancreas." The adrenalin mydriasis test of Loewi "surpasses all in the ready and simple manner of its performance." Dr. Sladden, however, thinks it rash to lay too much stress upon the pancreas alone in this connexion. An extensive list of references adds value to the article. The conclusion suggests that several such tests, or even a few, such as the last and perhaps the diastase test of the urine, both of ready clinical application, applied on many cases must become established as of collectively considerable value.

VITAMINES.

RECENT workers appear to be attaching an immense importance to vitamines in regard to their rôle in general metabolism. Further research, indeed, is tending to show that it would be profitable to study their action from a pathogenic point of view. It is suggested, for instance, in a valuable paper on Vitamines, by H. W. Bywaters, D.Sc., published in the October number of *Science Progress*, that in cancer, in which we have a pathological new growth of tissue, a special vitamine may be concerned. The question as to whether it is possible to inhibit this new growth by careful regulation of the diet with the view of excluding the vitamine has been raised. Experimental investigation at any rate so far seems to show that the vitamines for normal and cancerous growths are not identical, and it may prove to be possible to institute a diet that shall allow normal growth to proceed but which shall inhibit cancerous growth. Dr. Bywaters suggests that the minuteness of these vitamines which are requisite to maintain normal processes of life would appear to indicate that they have something to do possibly with the production of some of the essential hormones, internal secretions, enzymes, and so forth, in the animal organism. According to careful post-mortem examination of polyneuritic pigeons Casimir Funk found that this condition is associated with an extreme atrophy of the thymus, which suggests that the vitamine in rice has to do with the stimulation of this organ which evidently exerts its chief functions during the period of growth. Altogether the relationship which appears to exist between vitamines and metabolism calls for a continued study of these interesting bodies. So far the recognition of their peculiar properties appears to threaten our rudimentary physiological principles. Consider, as Dr. Bywaters suggests, the transformation of carbohydrate into fat which takes place on such a large scale where animals for market are fed on starchy foods. The starch and soluble carbohydrates in all such foodstuffs are reduced to glucose in the alimentary tract of these animals, and yet the food containing the largest amount of assimilable carbohydrate is by no means necessarily the most fattening. This would appear to show that something else is necessary to bring about the change from glucose to fat, and the suggestion is that this is a vitamine present in the different foodstuffs contained in the outer layers of the grain. The remarkable instance is further quoted of the difference in the fattening properties of two well-known adjoining fields in the Romney marshes. The vegetation is apparently identical, but the deduction is that in one case a vitamine is at work and not in the other. Further evidence is wanted, and it is to be hoped that this direction of research will be vigorously pursued in view of the great importance of the issues involved.

THE WAR AND MEDICAL STUDIES.

THE effect of the war upon the ancient universities has been very marked. Dr. A. E. Shipley, the Master of Christ's College, Cambridge, has drawn our attention to the significant figures at that university. The matriculations at Cambridge were only 665 as against 1110 last year. Almost exactly 50 per cent. of the usual number of members in residence are away, the proportion of absentees at various colleges being from 71 per cent. at Pembroke to 26 per cent. at St. Catharine's, the proportion naturally being greatest in the case of those colleges having a high reputation for athletics. In the Cambridge Medical School the figures are such as to give some ground for uneasiness. The number of medical students entered this year is only 64 as against an average of 113 in the past three years, and even of these entries it is said that at one college noted for scientific studies only 17 out of 32 entered as medical students have come into residence. The *Times* correspondent at Oxford says that only 600 men have matriculated this October, but last October 1000 new undergraduates came into residence, and the diminution among the senior students is even more marked, the medical faculty sharing in the depletion. The University of Edinburgh, which, as at Cambridge, boasts a large medical school, is 700 men short at least. We are not yet in possession of sufficient detailed statements from the London, provincial, Scottish, and Irish medical schools to enable us to determine to what extent the deficiencies in the number of those training for medicine at Cambridge are representative of medical schools generally, but it is easy to see that if anything like a similar deficiency occurs elsewhere there must presently arise a serious shortage in the personnel of the medical profession in this country. It is not to be wondered at, in the least, that the call to arms should appeal with almost resistless force to such a body of high-spirited, physically fit, and energetic young men as are the medical students for the most part of the present day. But there is much justification at any rate for the feeling that has been expressed by the General Medical Council that the first and paramount public duty of the medical student is to complete

his course and to qualify as early as possible. It must be remembered that time is of the essence of the matter in the preparation of the doctor. It is not merely one of several desirable requirements, which may, however, on adequate emergency be dispensed with without affecting the result. It is, therefore, in the highest degree desirable that the ranks of the future medical profession shall not be exhaustively drained through the abandonment, even though temporary, of their curriculum by too large a proportion of those in training for medicine.

HUMAN AND BOVINE INFECTION IN TUBERCULOSIS.

IN view of the doubt that still exists as to the importance of infection derived from cattle in the production of tuberculosis in man attention may be directed to a useful summary of the cases hitherto published which bear on this problem, compiled by Park and Krumwiede[1] and published in the Reports of the New York Health Department. The total number of cases reviewed is 1511, of which over half (831) were cases of pulmonary disease. In this group bovine infection appears to be almost negligible, only four among this large number of cases showing infection from this source. Again, no instance of bovine infection was discovered among nine patients who suffered from tuberculosis of the axillary or inguinal glands, a remarkable contrast to the group of cases exhibiting cervical adenitis in which so far as subjects under 16 years of age are concerned the figures for the two sources are not far from equal—viz., 51 human and 44 bovine. If we take together all cases in which the infection appears to be abdominal in origin a still more noteworthy proportion is due to bacilli derived from cattle and presumably taken into the system with infected milk. Thus, taking all ages together there are recorded 66 of human infection against 59 of bovine, while in children under 16 there are 34 of the former to 52 of the latter—a striking preponderance. On the other hand, in opposition to the view which has been advanced that tuberculosis of bones and joints, a common affection of children, is of bovine origin, it appears that only 4 cases out of 104 of such disease at all ages were of this nature. Taking the whole number of the cases together, there were 1363 of human origin, 137 of bovine, and 11 instances of mixed infection. The importance of tuberculous milk in the causation of infection of the cervical glands is borne out by the researches of Mitchell[2] at the laboratory of the Royal College of Physicians, Edinburgh, who found that of 80 cases of cervical adenitis in children 71, or 88 per cent., were due to bovine infection. Of 12 fatal cases of tuberculosis in children, 4 in which the disease appeared to originate in the mesenteric glands were due to the same source, while 7 in which the bronchial glands were the seat of origin, and 1 case of genito-urinary disease in which the seat of original infection was not ascertainable, were caused by the human type of bacillus. Examination of the milk-supply of Edinburgh showed the presence of tubercle bacilli in 20 per cent. of the samples taken. The view generally prevailing in this country, therefore, that infection from a bovine source is a comparatively rare but by no means negligible danger, is on the whole substantiated, as against the position originally adopted by Koch that the disease in cattle is of little or no importance as a source of human tuberculosis.

[1] The Relative Importance of the Bovine and Human Types of Tubercle Bacilli in the Different Forms of Tuberculosis. Collected Studies from the Bureau of Laboratories, Department of Health, City of New York. Vol. III. 1912-13.

[2] A Bacteriological Study of Tuberculosis of the Lymph Glands in Children, Edinburgh Medical Journal, September, 1914.

AN UNCANNY EFFECT OF SHELL ARTILLERY.

MORE than once in the accounts of the present war reference has been made to the use of shells which on exploding deal out death on all sides, leaving the victims fixed in their last attitude of life. They are said to have been left in life-like groups, remaining in exactly the position in which they died, some in the act of shooting still levelling the rifle, others dictating despatches, others lighting a cigarette, and so forth, the whole suggesting a group of waxwork bodies at Madame Tussaud's. That dead bodies can remain in the upright position without support from without is, of course, absurd, but it is interesting to point out that the favourite modern explosive is tri-nitro-toluol, and this gives off incidentally a large volume of carbon monoxide gas, which when inspired produces a healthy pink and life-like appearance in the corpse. Imagination has probably filled in the picture as to these victims appearing to retain a living posture. It will be remembered that carbon monoxide rapidly forms a characteristic compound with the hæmoglobin of the blood, which then assumes a pink, rosy colour, owing to the formation of carboxy-hæmoglobin. If a puff of tobacco smoke be directed upon a film of blood the change from red to pink is easily observed. Tri-nitro-toluol is obtained in crystalline form by the action of nitric acid on toluol, an analogue of benzene, and obtained by rectification of coal tar. The shell is filled by simply pouring the melted crystals into it, the mass then being allowed to solidify. It burns quite harmlessly and with the production of dense volumes of smoke when a light is applied to it. To get its explosive effect a detonator is employed, which is generally fulminate of mercury. Owing to the fact that it does not contain sufficient oxygen in its own molecule to burn the carbon and hydrogen completely into carbonic acid gas and water respectively, a considerable volume of carbon monoxide is produced, which may be accountable for the stories about its victims having the appearance of being alive.

CHOLERA IN AUSTRIA.

IN spite of official attempts to reassure the public, says a well-informed correspondent, it seems that the cholera epidemic in Austria-Hungary has assumed serious proportions. An official communication from the Medical Department of the Ministry of War, dated Oct. 12th, refers to cases which have occurred at Vienna and Budapest, and at eight or nine provincial towns. *Die Zeit*, of Vienna, published on the following day a statement from a Budapest doctor who, while dismissing any grounds for panic, admits that the epidemic has been on a considerable scale. He ascribes the outbreak entirely to the presence in Hungary of Russian and Serbian prisoners and fugitives from the eastern provinces of the Dual Monarchy. "The area in which the epidemic has raged is a large one," our correspondent continues, "because insufficient precautions were in the first instance taken at the various concentration camps. But good results have now followed the strenuous efforts

that have been made by the Hungarian doctors to combat the outbreak—efforts which have been seconded by the civil and military authorities. Prisoners now reaching Hungary are no longer allowed to pass at once into the concentration camps, but instead are domiciled in specially constructed wooden prisons and hospitals, where they are kept under a very close observation for a considerable time. Later on, if no symptoms are discovered the prisoners are transferred to the concentration camps. The deaths are less frequent and it seems certain that the worst is over." Less reassuring reports, however, continue to reach Switzerland of the extent and ravages of the epidemic. It is stated on good authority, for instance, that as many as 150 deaths from cholera have already occurred in one of the smaller Hungarian towns. The funerals of the victims, it is added, take place secretly at night.

Sir Alfred Pearce Gould has been appointed by the Senate of the University of London to act for the Vice-Chancellor, Sir Wilmot Herringham, during his absence at the seat of war as consulting physician to the British forces. Sir Bertrand Dawson has been elected Vice-Dean of the medical faculty of the University, Sir Alfred Pearce Gould being re-elected Dean.

Sir W. Watson Cheyne, President of the Royal College of Surgeons of England, will open a discussion at the Medical Society of London on Nov. 16th, at 8.30 P.M., on Surgical Experiences of the Present War. Mr. E. E. Austin, being absent on active service, will be unable to read the paper announced for Nov. 9th.

THE Bradshaw Lecture of the Royal College of Physicians of London will be delivered by Dr. Nestor Tirard on Nov. 3rd, the subject being The Study of Glycosuria. The FitzPatrick Lectures of the College will be delivered on Nov. 5th and 10th at 5 P.M. by Dr. Charles Mercier, who has chosen as his subject Leper Houses and Mediæval Hospitals.

Dr. Norman Moore, Honorary Fellow of St. Catharine's College, will deliver the Rede lecture in the Senate House of the University of Cambridge on Thursday, Nov. 12th, at 5 P.M., upon St. Bartholomew's Hospital in Peace and War.

Professor C. S. Sherrington has been elected to a professorial seat upon the Hebdomadal Council of the University of Oxford.

MEDICINE AND THE LAW.

A Quack Convicted of Manslaughter.

AT the Central Criminal Court Mr. Justice Rowlatt passed a sentence of three months' imprisonment in the second division upon Orlando Edgar Miller, convicted of the manslaughter of Miss Kate Addison Scott, a lady who was admitted to a house kept by the prisoner under the title of the "Miller Institute." Miss Scott suffered from paralysis and was treated by Miller, who appears to have described himself as a lecturer on "Higher Thought" and "Faith Healing," with various drugs, including hyoscine. Dr. W. H. Willcox in giving evidence for the prosecution ascribed death to "paralysis of the stomach and exhaustion caused by general treatment—namely, the lack of food during the early period, the administration of purgatives, and repeated injections of hyoscine." The prisoner, giving evidence on his own behalf, stated that he was an American, and claimed to have been employed by the authorities of the City of Chicago to treat persons addicted to the use of drugs and intoxicants. He stated that he had there had under his care in 18 months 1700 cases of delirium tremens, and that he had been successful in diminishing the death-rate from that cause from 80 to 1 per cent., his methods being favourably recognised by many physicians in the United States. The jury, however, convicted, and Mr. Justice Rowlatt, in passing sentence, congratulated them upon having done so. His lordship said that the conviction was of importance as showing persons who with no knowledge or with the little knowledge (which, he pointed out, is more dangerous than complete ignorance) undertake to deal with dangerous poisons that they could be found guilty of a crime in spite of rhetoric and tall talk about cures, about a wonderful mental treatment, about the "unity of the infinite and all that sort of stuff." The verdict showed that a British jury, when it found that someone had been subjected to deadly poison by an incompetent person, would go straight to the business mark and say it was manslaughter. He referred to the lightness of the sentence that he was passing upon this occasion, and intimated that if any similar case came before him in future he should not be so lenient. This warning may be commended to the consideration of many unqualified persons now endangering the lives of patients with apparent impunity.

Keats v. *Bracey Wright.*

After a trial lasting five days before Mr. Justice Bray and a special jury Mr. W. J. C. Keats recovered a verdict for £300 damages for libel against Mrs. C. A. R. Bracey Wright (Countess de Lormet) and her son, Mr. W. H. C. Bracey Wright. At the first hearing of the case the jury disagreed. The statements complained of alleged that the plaintiff had flogged with a "five-tailed lash" convalescent children in the Camberwell Infirmary, of which he is medical superintendent, and that a practice of flogging prevailed at the infirmary, the accusations being contained in an election address issued in connexion with the defendants candidature for the Camberwell board of guardians. The defendants pleaded that the statements complained of were true, and that the opinions expressed were fair comment upon matters of public interest. Mr. Keats in his evidence explained that during the 16 years he had been superintendent of the infirmary he had corrected four or five boys for continued bad behaviour, using the indiarubber tubes of a stethoscope or five strands of string tied together. Certain specific allegations with regard to the alleged chastisement of particular children he denied altogether. A series of questions was left to the jury by the learned judge, the findings on all points being in the plaintiff's favour, and judgment was given for the sum above mentioned with costs, subject to a stay of execution on terms with a view to an appeal. A rider to the verdict recommended that the correction of children in the infirmary should be reported at the next meeting of the guardians. This, it was stated by counsel, was the course now pursued at Camberwell. Mr. McCall, K.C., and Mr. A. Neilson, instructed by

Messrs. Le Brasseur and Oakley for the London and Counties Medical Protection Society, appeared on behalf of the plaintiff, and the society, as well as Mr. Keats, are to be congratulated upon the complete vindication of the latter's character thus achieved after prolonged litigation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL REPORT OF THE COUNCIL.

THE annual report of the Council of the College, which is to be presented to the annual meeting of Fellows and Members on Thursday, Nov. 19th, has now been published, and contains a record of the work accomplished by the College in its various departments during the year ending August 1st, 1914. The resolutions which were carried at the last annual meeting are recorded, together with the replies of the Council. At the meeting of the Council in March a motion was brought forward to the effect that the time had arrived when steps should be taken to enable Members to vote for the election of a limited number of members of the Council, but after a prolonged discussion this was negatived by a large majority. In February the Council were asked to take part in a deputation to the Government on the position of medical officers of health as regards security of tenure and superannuation. While declining this invitation the Council asked the President to consult with representatives of the Society of Medical Officers of Health, and after this had been done a letter was addressed to the President of the Local Government Board dealing with the question solely from the point of view of public advantage. After impartial consideration of the arguments against the proposed change the Council stated that these were not in their opinion strong enough to outweigh those in favour of the request by medical officers of health for security of tenure with a corresponding system of superannuation. Much dissatisfaction having been expressed by medical men with the suggested employment of non-qualified persons for the purpose of medical treatment under the National Insurance Act, a protest was submitted on behalf of the College to the English Insurance Commission. This protest and the reply to it are printed in the report. During the year Mr. F. Richardson Cross, Mr. D'Arcy Power, and Mr. S. G. Shattock were appointed by the Council to give evidence before the Royal Commission on Venereal Diseases: Mr. Cross giving evidence as to the effects of syphilis upon the eyes; Mr. Power on the general effects of syphilis; and Mr. Shattock upon the remote pathological effects of syphilis, the Wassermann test in the diagnosis of late effects of syphilis, and the latent distribution of syphilis.

The first annual Congregation of the American College of Surgeons at Chicago on Nov. 13th, 1913, was attended by the President, Sir Rickman Godlee, and an address of congratulation from the English College was presented. Sir Rickman Godlee also visited Toronto, where the degree of LL.D. was conferred upon him, and on his departure from New York he was presented with the gold medal of the National Institute of Social Sciences, of which he was made an honorary member. In connexion with the fifth annual session of the Clinical Congress of Surgeons of North America held in London at the close of July last demonstrations at the College were given by Professor Arthur Keith, Mr. S. G. Shattock, Sir Rickman Godlee, Mr. J. F. Colyer, and Mr. Arthur H. Cheatle, while a reception for the members of the Congress was held in the College on the afternoon of July 29th.

With regard to the Licence in Dental Surgery, it is announced that examinations will be held in future thrice instead of twice a year. The examination for the Diploma in Tropical Medicine and Hygiene, granted jointly by the College and the Royal College of Physicians of London, will in future be divided into two parts, and amended regulations have accordingly been adopted. The Jacksonian prize for the year 1913 was awarded to Mr. J. Howell Evans. The subject for the year 1915 is Congenital Dislocations of the Joints, their Pathology and Treatment. The subject for the present year is the Pathology, Diagnosis, and Treatment of Trigeminal Neuralgia, and dissertations must be delivered at the College not later than 4 o'clock P.M. on Thursday, Dec. 31st, 1914. The first award of the Sir Gilbert Blane medal under the revised regulations was made to Surgeon G. F. Syms, R.N.

The financial statement shows that the gross income of the College, exclusive of the income from trust funds, amounted to £26,833, an increase of £819 on the amount for the previous year, while the expenditure in respect of revenue amounted to £21,425, a decrease of £836 on the previous year. The receipts and expenses in connexion with the trust funds are placed this year in a separate account. While it is evident that the College is in a good financial position at the present time the Council consider that it is most important to add to its invested funds for several reasons. Among these may be mentioned: (1) the insecurity of the income derived from examination and diploma fees; (2) the continued increase in rates and taxes; (3) the growth of the museum and library and consequent increase in cost of upkeep; (4) the probability that, in course of time, it will become necessary to make extensive additions to the College buildings, at a large capital outlay, to provide further accommodation for the museum and library. During the year the number of diplomas issued was as follows: Membership, 408 (including 8 women); Fellowship, 71; Licence in Dental Surgery, 110; Diploma in Public Health, 62 (including 5 women); Diploma in Tropical Medicine, 4.

On July 9th Sir William Watson Cheyne was elected President of the College, and Sir Frederic Eve and Sir Anthony A. Bowlby Vice-Presidents.

Four years ago the Council sanctioned a scheme for the recataloguing and rearrangement of the entire pathological collection in the museum. The work of revision in the section of general pathology, to which Mr. Shattock and his assistant, Mr. Beadles, first devoted themselves, has now proceeded far enough to make this part of the museum particularly worthy of study by medical practitioners and students. As now arranged the collection of general pathology occupies 32 cases, and four more will be added. The report contains a list showing the main contents of each case, while attention is drawn to the changes, improvements, and additions which are being carried out in the physiological section which is really the counterpart of the series illustrating general pathology. The various donations of specimens made to the museum during the year are referred to in the report, and the significance of the more important of these is pointed out. It is noted that the number of visitors to the museum has considerably declined, which is partly explained by the precautions taken to admit only those who come for the purpose of serious study or enlightenment. During the period under review the supply of books and periodicals to the library was well kept up. The volumes in the library were counted early this month and were found to number 66,525. The tracts and pamphlets bound in volumes of from 10 to 20 each are estimated at about 45,000, of which number two-thirds are catalogued.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

A meeting of Fellows and Members will be held at the College in Lincoln's Inn Fields on Thursday, Nov. 19th next, at 3 o'clock P.M. The report of the Council, of which copies can be obtained on application to the secretary, will be laid before the meeting. Motions to be brought forward at the meeting must be signed by the mover, or by the mover and other Fellows and Members, and must be received by the secretary not later than Nov. 9th. A copy of the agenda will be sent on application after Nov. 16th.

LECTURE ARRANGEMENTS.

The Bradshaw Lecture for 1914 will be delivered by Sir Frederic Eve on Pancreatitis on Tuesday, Dec. 15th, at 5 P.M.

The Hunterian Oration for 1915 will be delivered by Sir William Watson Cheyne on Monday, Feb. 15th, at 4 P.M.

The Hunterian Lectures will be delivered as follows:—Professor H. Blakeway: One lecture on the Treatment of Hare-lip and Cleft Palate, Feb. 17th, at 5 P.M. Professor F. C. Pybus: One lecture on Some Infections of the Tonsil, Feb. 19th, at 5 P.M. Professor Arthur Keith: Six lectures on the Anatomy and Mechanism of the Alimentary Canal, Feb. 22nd, 24th, 26th, March 1st, 3rd, and 5th, at 5 P.M. Professor W. Sampson Handley: One lecture on Enterocolic Ileus, March 8th, at 5 P.M. Professor J. Howell

Evans: One lecture on Some Congenital Lesions of the Small Intestine, their Origin, Clinical Bearings, and Treatment, March 10th, at 5 P.M. Professor Rupert Farrant: Two lectures on the Effect of Toxins on the Tissues, March 17th and 19th, at 5 P.M.

The Arris and Gale Lectures will be delivered by Professor David Waterston: Two lectures on Further Recent Investigations in the Development of the Human Body, March 12th and 15th, at 5 P.M.; and by Dr. F. Wood Jones: One lecture on the Influence of the Arboreal Habit in the Evolution of the Reproductive System, March 22nd, at 5 P.M.

ASYLUM REPORTS.

County and City of Worcester Asylum (Annual Report for the Year 1913–14).—The total number of cases under treatment was 1221, the average number resident being 1069. There were admitted 142 patients, of whom 121 were direct admissions. Mr. G. M. P. Braine-Hartnell comments on the fact that in only 14·9 per cent. of the cases was a history of heredity obtained. Mental stress was noted in 15·7 per cent., senility in 10·7 per cent., and alcohol in 4·1 per cent. Sixty-six patients have been discharged, with a percentage of 32·2 of recoveries on the direct admissions. The deaths numbered 86, of which 22·1 per cent. were caused by heart disease, 17·4 per cent. by phthisis, and 15·1 per cent. by general paralysis. Mr. Braine-Hartnell remarks that the deaths from general paralysis have increased from 7·5 per cent. in 1912 to 15·1 per cent. in 1913. Post-mortem examinations were made in 85 per cent. of cases.

Bootham Park Hospital for the Insane, York (Annual Report for the Year 1913).—The total number of cases under treatment during the year was 175, the average daily number resident being 127, of whom 59 were males and 68 females. There were 33 direct admissions and 12 voluntary boarders. There were 10 cases transferred from other institutions, all of which were chronic, and most of them bad cases. Dr. George R. Jeffrey, the medical superintendent, is of the opinion that change of surroundings to another asylum often greatly benefits these chronic insane patients. Of the patients admitted none was in good bodily health. Dr. Jeffrey believes that rest in bed in the open air is the most rational treatment for such cases. He has found the open-air treatment especially valuable in dealing with the noisy chronic insane. It generally does away with the necessity of seclusion and sedatives. In 18 cases of the admissions a distinct history of mental stress was obtained, and in eight the age epochs were considered to be causal. Several of the cases were associated with the presence of distinct bodily conditions of disease, which were thought to be the chief cause of the mental state—thus 1 occurred during gestation, 1 during lactation, 2 with disease of the thyroid gland, 1 with influenza, 1 with diabetes, and 1 with syphilis. Four cases presented physical signs of alcoholism, without which the diagnosis of alcoholic insanity is hardly permissible. During the year 26 patients were discharged, with 45·4 per cent. of recoveries. There were 5 deaths, the proportion to the daily average population being 4·06 per cent.

Mental Hospital for the County Borough of Leicester, West Humberstone (Annual Report for the Year ending March 31st, 1914).—The total number of patients under treatment during the year was 1067, the average daily number resident being 860. The number of admissions was 209. The following are the principal assigned causes of insanity in the admissions: heredity, 65; mental stress, 16; alcoholic intemperance, 13; senility, 11; epilepsy, 8; and syphilis, 6. Dr. J. Francis Dixon, the medical superintendent, remarks, in connexion with the causation and prevention of insanity, that the great majority of workers in this specialty are isolated from the general community and that their experience is largely confined to the care and treatment of mental disease arising in an environment with which they are but imperfectly acquainted. The psychological line of inquiry into the causes of certain forms of insanity is assuming an increasing degree of importance and the bearing of education, occupation, heredity, environment, and the rapidly changing conditions of life generally comprise fields of promising investigation. Until such trained investigation becomes general the mass of information returned annually to the commissioners, upon which are based their statistics, must of necessity lead to very unreliable conclusions. The number of deaths was 77; and in every case the cause of death was verified by post-mortem examination. The average death-rate was 8·95 per cent. Heart disease was the cause of death in 20 cases and phthisis in 7 cases.

Royal Edinburgh Mental Hospital, Morningside (Annual Report for the Year 1913).—The total number of cases under treatment during the year was 1022, the average daily number resident being 773. The admissions numbered 238, and in 40 per cent. of these hereditary influences were found to be present. Senile decay was also a very noticeable feature among the admissions. Nearly 1 in every 9 admitted was over 70 years of age. Alcohol was believed to have been the exciting cause in 12·5 per cent. of the male cases and in 11·5 per cent. of the female cases. The fourth most frequent cause of insanity appeared to be syphilitic infection, which in the case of men occupies a position second only to hereditary influences, and equal in importance to alcoholic excess. Dr. George M. Robertson, the physician-superintendent, refers to the surprising information that has been obtained from the routine examination of nervous and mental cases by the Wassermann method. In an examination of 200 cases of mental deficiency, undertaken by Dr. Kate Fraser and Dr. Watson, it was found that more than half of these, of every grade of severity, suffered from syphilis. The astounding nature of this revelation can be judged by the fact that if any standard work on mental deficiency be consulted the statement is made that this disease is not an important cause of idiocy or imbecility, and that 5 per cent. would more than cover the cases to be attributed to it. The discharges numbered 59, with a recovery rate of 25 per cent. on the total number of admissions. The test of recovery employed has been a severe one. The total number of deaths was 82, making a percentage of 10·6 on the average number resident. Twenty-two of the deaths were due to general paralysis and 7 to consumption. Dr. Robertson then goes on to consider the question as to whether insanity, or rather the liability to insanity, is increasing, basing his remarks on consideration of the statistics of institutions and the reports of the 1911 Census. He takes into full account statistical fallacies, and he comes to the conclusion that there has been during the last decade a proportionate increase in the number of insane persons living the early adult and late period of life, but a decrease during the middle period. There is reason to believe that the liability to suffer from mental disease may not have increased at the early and late periods, and may not have diminished during the period of middle age. It is at this middle period that the acquired or preventable insanities chiefly occur, and therefore it is at this period that the effects of temperance, self-control, adequate nourishment, and healthier surroundings would first appear. A new departure has been made this year in the institution, which is paying for the working expenses of a physician, who receives a grant from the Carnegie Trust, whose sole duty it is to visit the homes and families of the parochial patients sent to the institution. For the first time in this country, a detailed investigation by the personal inspection and inquiries of a medical man is being made into the possible hereditary and environmental causes of the insanity of the cases admitted. The importance of this measure cannot be over-estimated.

Hertfordshire County Asylum, St. Albans (Annual Report for the Year ending March 31st, 1914).—The total number of cases under treatment during the year 1913 was 1008, the average daily number on the register being 836. The direct admissions numbered 152, and of these 100 were first attack cases. The recoveries amounted to 59, 53 of whom had been direct admissions in 1913 and previous years. The proportion of recoveries to the direct admissions in 1913 was 34·9 per cent. The average for the last 13 years has been 31·7 per cent. A more reliable percentage of recoveries is given by separating the "first attack cases" from the "not first attack" cases and imbeciles. The percentage of recoveries of the first attack cases from 1901 to 1913 inclusive was 30·6 per cent., and that of the "not first attack" cases for the same period 46·7 per cent. The deaths numbered 38 men and 31 women, a percentage of 8·25 on the average daily number on the register. Post-mortem examinations were made in 63 cases. Phthisis accounted for 6 deaths and heart disease for 8.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Deputy Surgeon-General: O. W. Andrews, retired, to the *Revenge*, on commissioning. Fleet Surgeons: G. Hewlett, retired, to Portsmouth Dockyard; and O. Rees and K. H. Jones to the *Pembroke*, additional, for disposal. Staff-Surgeons: P. T. Nicholls and W. R. Harrison to the *Victory*, additional, for disposal; and J. H. Lightfoot to the *Pembroke*, additional, for the *Cornwallis*, on commissioning. Temporary Surgeons: H. J. McCaw to the *Revenge*, on commissioning; F. P. Pocock to the *Colossus*; A. Todrick to the *Collingwood*; W. W. Rorke to the *Hercules*; A. J. MacDiarmid to the *Vanguard*; A. D. E. Bayliss to the *Iron Duke*, for the *Oak*; J. Rothwell to the *Commonwealth*; G. E. W. Lacey to the *Dominion*; A. C. Morson to the *Zealandia*; H. C. Waldo to the *Lowestoft*; H. L. G. Foxell to the *Cornwallis*, on commissioning; W. L. M. Goldie to Royal Marine Infirmary, Deal, temporary; W. R. E. Unthank to the *Wildfire*, additional, for R.N. Barracks and Sheerness Dockyard; B. H. Pain and E. I. Parry to the *Vivid*, additional, for disposal; B. Malaher to the *Wildfire*, additional, for disposal; A. B. Slater, H. Harvey, and N. F. Lloyd, all to the *Pembroke*, additional, for Chatham Hospital, additional; E. R. Bailey, W. D. Galloway, G. C. Fairchild, S. L. Harke, and E. H. Hugo, all to the *Vivid*, additional, for Plymouth Hospital, additional; and P. D. Brownfield to the *Victory*, additional, for Haslar Hospital, additional.

The undermentioned have been appointed Surgeons for temporary service in His Majesty's Fleet:—Alfred F. Adamson Henry Graeme Anderson, Walter Martin Ash, Edwin R. Bailey, Alfred D. E. Bayliss, Henry Cecil Billings, Thomas S. Bradburn, Horace George Brown, Owen D. Brownfield, Ronald Edgar Russell Burn, Henry Lambert D'Olier Duckworth, George C. Fairchild, Edward Low Fisher, R. S. French, William D. Galloway, Walter Leigh Mackinnon Goldie, Peter Morris Grundy, George Hamilton, Sydney L. Harke, Maurice H. de J. Harper, Harold Harvey, Edward H. Hugo, William John Jago, Reginald H. Knowles, Nigel F. Lloyd, Hugh J. McCaw, Bruce Malaher, Charles A. Masson, Thomas R. G. Melrose, Gavin Denholme Muir, Thomas Norman, Max Onslow-Ford, Harry G. Parker, Basil H. Pain, Evan Parry, Basil Alfred Playne, John Rothwell, James Alexander Russell-Cargill, Alexander Scott, Frederick G. L. Scott, Harold Munro Scott, Alan B. Slater, Geoffrey Sparrow, John Spencer-Daniell, G. Charles Henry Shinglewood Taylor, Edward M. Thomson, Reginald W. Townley, William R. E. Unthank, Henry Cecil Waldo, Llewellyn R. Warburton, Henry Wilks, and Norman Valentine Williams.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon: L. C. D. Irvine to the *Pembroke*, additional, for the *Cornwallis*, on commissioning. Probationary Surgeons: J. A. D. Skinner to the *Dido*, additional, for the *Leonides*; and A. G. G. Guinness to the *Hecla*, additional, for the *Shark*.

ARMY MEDICAL SERVICE.

Colonel Michael W. Russell to be Deputy Director-General and temporary Surgeon-General, vice Surgeon-General W. G. Macpherson, C.M.G., H.P.K. (dated Oct. 15th).

ROYAL ARMY MEDICAL CORPS.

Regular Forces.

The undermentioned Captain to be Major: Charles W. Holden (dated Sept. 1st).

Ulster Division:—Divisional Field Ambulance, 3 Field Ambulances (9 Sections): The following temporary appointments and rank are approved:—To be Lieutenants: Dated Oct. 9th: W. R. M'Kenzie, A. J. Best, W. K. Caldwell, S. Pinion, and H. G. Wilson.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation):—William Semple Wallace and Arthur Ashton Smalley.

NEW ARMY.

Royal Army Medical Corps.

Robert Stuart Rodger, late Captain R.A.M.C., to be temporary Captain (dated August 4th). Lieutenant Treffry O. Thompson is confirmed in his rank.

The undermentioned to be temporary Lieutenants: Adrian Stokes, Wilfred Thomas Chaning-Pearce, John Hewat, Robert Haig Spittal, Hubert Wybrants Powell, Edward Archibald Walker, Thomas Strethill Wright, Ernest White, Edward Cawardine Gimson, William Evershed Wallis, William Wood Forbes, Robert Kennon, Francis Eldon Daunt, David James Sheires Stephen, Philip Adams Opie, Charles Gordon Timms, Guy Annesley Carter Mitchell, Edgar Grey, John Fleming, Gordon Stewart Woodman, Charles Henry Robson, John Polson Davidson, William Peat Hogg, Thomas Fehily, George Wilson, John Scott, James Walter McLeod, Bryce McCall Smith, Lewis Anderson, Mark Bates, John Cattanach, Henry Goulding Rice, David Reid Eccles Roberts, Victor Donald Orr Logan, Ernest Nedwons Snowden, William Poole Henley Munden, James Fraser, Kenneth Grant Fraser, John Samuel Levis, David Robertson Mitchell, Denis Jeffcott Stokes, Charles Mollyson Smith, John Henry Victor Scott, Francis Joseph Wisely, Harold McAllum, John McLean Pinkerton, William Claughton Douglass, Patrick Kennedy Murphy, Alan Wilson, Malcolm King Acheson, Reginald William Gemmell, Alexander Anderson, Carl Keating Graeme Dick, William Gordon Gordon, John Eric Stacey, John Vere Orlebar Andrew, John Spence, John Peter Cahir, Ernest Frederick Charles Dowding, Thomas Philips Cole, John Parkinson, John Hart McNicol, Reginald Joseph Wooster, William MacKenzie, Charles Michael Foster, Edward Whyte Alment, Cedric Rowland Taylor, Douglas William Hunter, James Stewart Somerville, Thomas Percy Lewis, Claude Gordon Douglas, John Wellesley Flood, Ralph Franklin Eminson, William Edward Hopkins, Robert Bruce Wallace, William Barrie Watson, John Capell, Spencer Jackson, James Alison Glover, Norbert Reader, Stanley Fenwick, William Ernest Fetherstonhaugh, Archie Reith Fraser, Wilfrid Victor Macaskie, James George Copland, John Maitland Forsyth, James Harris Connolly, John Patrick Egan, George Jackson, Christopher Elliott, Alexander Erskine Drynan, Henry Dewi Hampton Willis-Bund, Archibald Stirling Kennedy Anderson, James Warburton Brown, David Stanger Harvey, Edward Fortrey George Turnbull Heap, George Millar, Kenneth William Mackenzie, and Frederick William McMillan.

Temporary Lieutenant Bagot N. Blood relinquishes his temporary commission.

The undermentioned to be granted temporary rank as follows, whilst serving with the Welsh Hospital:—Temporary Lieutenants: Fergus Armstrong, Thomas Garfield Evans, Bernard Geoffrey Klein, and John Sydney Rowlands. Temporary Quartermaster and Honorary Lieutenant: Edward James August.

INDIAN MEDICAL SERVICE.

Medical Staff:—To be Medical Officer in Charge of a Hospital Ship: Lieutenant-Colonel G. H. D. Gimlette, C.I.E., I.M.S., retired (dated Sept. 11th).

TERRITORIAL FORCE.

Royal Army Medical Corps.

The undermentioned to be Captains: Henry Wade (late Captain, Unattached List for the Territorial Force). Captain George Burnside Buchanan, from the 4th Scottish General Hospital. William Brown from the 1st Scottish General Hospital. Raymond Vérel.

The undermentioned to be Lieutenants:—Lieutenant William J. M. Slowan, from the 2nd London Sanitary Company, Royal Army Medical Corps, Arthur Edmund Ironside, John Alexander Watt; Bayard Erle Thomas Randall to be Transport Officer, with honorary rank; Guy Reginald Baynes to be Quartermaster, with honorary rank; Charles Reynolds Woodruff, John Francis Wilcox Wyer, Wilfred Ralph Sadler, William Scarisbrick, Thomas Murray, William Hedley Jay to be Transport Officer, with honorary rank; Quartermaster and Honorary Lieutenant William A. Fish, from the 3rd London General Hospital, Royal Army Medical Corps, to be Quartermaster, with the honorary rank of Lieutenant.

2nd London Sanitary Company: Captain Charles Milton Fegen, from the list of Sanitary Officers available on mobilisation, to be Captain.

1st Eastern General Hospital: Charles Herbert Budd to be Captain.

4th London General Hospital: The undermentioned to be Lieutenants: Henry Park Ashe, Lennard Game, George William Shore, and John Everidge.

4th Southern General Hospital: Captain Gilbert J. Arnold resigns his commission.

2nd Western General Hospital: Captain Alexander Wilson to be Major.

Royal Horse Artillery:—Shropshire: Surgeon-Captain George Mackie to be Surgeon-Major (dated August 4th, 1914).

London Mounted Brigade Field Ambulance: Thomas Hillier Chittenden to be Major. James Wilson McIntosh (late Lieutenant, Royal Army Medical Corps, Territorial Force) to be Captain. The undermentioned to be Lieutenants: William Francis Smartt, Harold Edward Gibson, and Duncan Frederick Macrae.

Scottish Horse Mounted Brigade Field Ambulance: Major Samuel Macfarlane Sloan, from Attached to Units other than Medical Units, to be Lieutenant-Colonel. Hugh Richardson (late Captain R.A.M.C., T.F.) to be Major.

2nd Northumbrian Field Ambulance: Arthur Langford Bastable to be Lieutenant.

3rd East Anglian Field Ambulance: Major Josiah Oldfield to be Lieutenant-Colonel. Leonard Robert Tosswill (late Captain, 1st Wessex Field Ambulance, Royal Army Medical Corps) to be Lieutenant.

1st West Riding Field Ambulance: Captain Alexander B. S. Stewart to be Major.

2nd West Riding Field Ambulance: Captain Charles W. Eames to be Major (temporary).

2nd South Midland Mounted Brigade Field Ambulance: Captain Alfred W. Moore to be Major.

1st South-Western Mounted Brigade Field Ambulance: Major George Rodway Swinhoe, retired list, Territorial Force, to be Major.

2nd South-Western Mounted Brigade Field Ambulance: Louis Joseph Edward McHugh to be Lieutenant.

2nd West Lancashire Field Ambulance: Captain William Macdonald to be Major.

3rd West Lancashire Field Ambulance: Captain Ernest Knight, from the Territorial Force Reserve, to be Captain.

1st London (City of London) Field Ambulance: Eliezer Coplans and David Jobson Scott to be Lieutenants.

2nd London (City of London) Field Ambulance Hubert Charles Phillips (late Captain, Royal Army Medical Corps) (Volunteers) to be Captain. Honorary Lieutenant in the Army William Ernest Rielly to be Captain. William Gibbs Lloyd to be Lieutenant.

3rd London (City of London) Field Ambulance: Myer Coplans to be Captain. Stanley Wyard and Cedric Rowland Taylor to be Lieutenants.

5th London Field Ambulance: The undermentioned to be Lieutenants: Alfred Hugh Bell, John MacMillan, Hector Mackay Calder, and Maurice Ulick Wilson. Harold Marshall Lambert to be Transport Officer, with the honorary rank of Lieutenant. Herbert Ernest Balfern Ware to be Quartermaster, with the honorary rank of Lieutenant.

3rd Wessex Field Ambulance: James Kearney to be Lieutenant.

Welsh Border Mounted Brigade Field Ambulance: Captain Douglas C. L. Orton to be Major.

4th London Field Ambulance: John Muir (late Captain, Royal Army Medical Corps, Territorial Force) to be Captain.

6th London Field Ambulance: John Edmund Bishop Wells (late Surgeon-Captain, 1st Volunteer Battalion, The Bedfordshire Regiment) to be Major.

Eastern Mounted Brigade Field Ambulance: Lieutenant Claudius G. K. Sharp to be Captain and James MacBain Taylor to be Lieutenant.

3rd Highland Field Ambulance: Captain Alexander E. Kidd to be Major. The undermentioned to be Lieutenants: John Strathearn and George Bruce Killoh.

1st South Midland Field Ambulance: Gerard Thomas Andrewes Uthwatt to be Transport Officer, with the honorary rank of Lieutenant.

2nd North Midland Field Ambulance: Robert Burton Meikle Yates (late Cadet, Sedbergh School Contingent, Junior Division, Officers Training Corps) to be Lieutenant.

Home Counties Clearing Hospital: Major James S. Warrack to be Lieutenant-Colonel.

Attached to Units other than Medical Units.—Captain Henry A. Rudyard to be Major. Captain John R. Williams to be Major. To be Captains: Captain Thomas Mahon Morton, from the Territorial Force Reserve, Lieutenant Arthur L. Heiser, Lieutenant Arthur E. Gladstone, Henry Neville Burroughes (late Captain, 1st London (City of London), General Hospital, Royal Army Medical Corps), Henry William Laing, Lieutenant James L. Joyce, Lieutenant James McHoul, Wilfred Ernest Alderson (late Captain, Royal Army Medical Corps, Territorial Force), and Captain William Thomas Ritchie, from the 2nd Scottish General Hospital. To be Lieutenants: George Finch, Harold Fitzwilliam Comyn, Alfred Herbert Tresham Andrew, John Archibald Thomson, John Clarke, Alexander Anderson, Reginald Douglas Gawn, John Arthur Parsons, Dugald Charles Bremner, Sidney Herbert Clarke, Frank Herbert C. Watson, Robert McAdoo, Sydney James Clegg, George Herbert Hind Manfield, and John G. Morgan (late Lieutenant, 2nd Welsh Brigade, Royal Field Artillery).

DEATHS IN THE SERVICES.

Deputy Surgeon-General Edward McKellar, I.M.S. (retired), at Brighton on Oct. 27th. He saw service in the Burmese war and the Indian Mutiny, and was a member of the Abyssinian Expedition. He attained the rank of deputy surgeon-general in 1877.

Temporary Surgeon A. E. F. Kynaston, R.N., of H.M.S. *Devonshire*, on Oct. 13th, at Dunskaith Hospital, from enteric fever.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8377 births and 4788 deaths were registered during the week ended Saturday, Oct. 24th. The annual rate of mortality in these towns, which had declined from 15·7 to 13·4 per 1000 in the four preceding weeks, rose in the week under notice to 13·8 per 1000 of their aggregate population, estimated at 18,120,059 persons. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·2, against a corresponding rate of 13·3 per 1000 in London. Among the several towns the death-rate last week ranged from 3·5 in Wimbledon, 4·9 in Acton, 5·9 in Ealing, 6·1 in Bournemouth, and 6·4 in Hornsey, to 17·0 in Sunderland, 17·2 in Great Yarmouth, 19·7 in Exeter, 20·0 in Huddersfield, 21·1 in Liverpool, and 22·3 in Birkenhead.

The 4788 deaths from all causes were 135 in excess of the number in the previous week, and included 540 which were referred to the principal epidemic diseases, against numbers declining from 1437 to 529 in the five preceding weeks. Of these 540 deaths, 269 resulted from infantile diarrhœal diseases, 101 from measles, 79 from diphtheria, 37 from scarlet fever, 35 from whooping-cough, and 19 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·6, against 1·5 per 1000 in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had steadily declined from 1223 to 322 in the five preceding weeks, further fell to 269, and included 76 in London, 32 in Liverpool, 17 in Birmingham, 9 in Sheffield, 8 in Manchester, and 7 in Nottingham. The deaths referred to measles, which had been 61, 73, and 67 in the three preceding weeks, rose to 101 last week, of which 22 were registered in London, 11 in Liverpool, 10 in Manchester, 9 in Leeds, 7 in Birmingham, 7 in Oldham, 6 in Birkenhead, and 6 in Newcastle-on-Tyne. The fatal cases of diphtheria, which had been 63, 57, and 59 in the three preceding weeks, further rose to 79 last week; 30 deaths occurred in London, 4 each in Stoke-on-Trent, Birmingham, and Middlesbrough, and 2 each in Tottenham, Portsmouth, Southampton, Devonport, Bristol, and Hull. The deaths attributed to scarlet fever, which had been 29, 31, and 29 in the three preceding weeks, rose to 37 last week, and included 7 in Manchester, 5 in Liverpool, 5 in Birmingham, 3 in London, 2 in Ipswich, and 2 in Preston. The deaths referred to whooping-cough, which had been 50, 47, and 38 in the three preceding weeks, further declined to 35 last week, of which 8 were recorded in London and 2 each in Plymouth, Birkenhead, St. Helens, Leeds, Sheffield, and Cardiff. The fatal cases of enteric fever, which had been 23, 17, and 14 in the three preceding weeks, rose to 19 last week, and included 3 in London, 2 in Liverpool, and 2 in Stockton-on-Tees.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 4473 in the nine preceding weeks, had further risen to 4616 on Saturday last; 657 new cases were admitted during the week, against 640, 670, and 650 in the three preceding weeks. These hospitals also contained on Saturday last 1481 cases of diphtheria, 69 of enteric fever, 38 of whooping-cough, and 32 of measles, but not one of small-pox. The 1273 deaths from all causes in London were 68 in excess of the number in the previous week, and corresponded to an annual death-rate of 14·7 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 110 to 178 in the five preceding weeks, further rose to 191 in the week under notice, and were 40 above the number registered in the corresponding week of last year.

Of the 4788 deaths from all causes in the 97 towns, 200 resulted from different forms of violence and 402 were the subject of coroners' inquests, while 1448 occurred in public institutions. The causes of 48, or 1·0 per cent. of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, and in 56 other smaller towns. Of the 48 uncertified causes of death, 13 were registered in Birmingham, 10 in Liverpool, and 2 each in Stoke-on-Trent, Preston, Barrow-in-Furness, Darlington, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1213 births and 659 deaths were registered during the week

ended Saturday, Oct. 24th. The annual rate of mortality in these towns, which had been 15·6, 15·9, and 14·7 per 1000 in the three preceding weeks, rose to 15·0 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 14·4, against 13·2 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 1·2 in Clydebank, 7·9 in Ayr, and 11·3 in Motherwell, to 19·6 in Aberdeen, 20·6 in Kilmarnock, and 22·8 in Kirkcaldy.

The 659 deaths from all causes were 13 in excess of the number in the previous week, and included 80 which were referred to the principal epidemic diseases, against 96 and 81 in the two preceding weeks. Of these 80 deaths, 31 resulted from infantile diarrhœal diseases, 19 from diphtheria, 16 from scarlet fever, 9 from whooping-cough, 4 from enteric fever, and 1 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 1·6 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 52, 54, and 29 in the three preceding weeks, slightly rose to 31 last week, and included 16 in Glasgow, 5 in Motherwell, and 3 in Dundee. The deaths referred to diphtheria, which had increased from 4 to 19 in the five preceding weeks, were again 19 last week, of which 7 were registered in Aberdeen, 5 in Edinburgh, 4 in Glasgow, and 2 in Kirkcaldy. The fatal cases of scarlet fever, which had risen from 6 to 16 in the five preceding weeks, were again 16 last week, and included 8 in Glasgow and 6 in Aberdeen. The deaths attributed to whooping-cough, which had been 13, 8, and 10 in the three preceding weeks, were 9 last week, of which 7 occurred in Glasgow. The 4 deaths referred to enteric fever were slightly below the average in recent weeks, and comprised 3 in Glasgow and 1 in Falkirk. The fatal case of measles was recorded in Dundee.

The deaths referred to diseases of the respiratory system, which had increased from 62 to 89 in the five preceding weeks, were again 89 in the week under notice; 21 deaths resulted from various forms of violence, against numbers rising from 20 to 29 in the four preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 575 births and 365 deaths were registered during the week ended Saturday, Oct. 24th. The annual rate of mortality in these towns, which had been 17·3, 15·4, and 16·2 per 1000 in the three preceding weeks, declined to 15·8 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 16·9, against corresponding rates of 13·2 and 14·4 per 1000 in the English and Scotch towns respectively. The annual death-rate last week ranged from 15·3 in Dublin (against 14·7 in London and 15·1 in Glasgow), 16·9 in Belfast, 17·0 in Cork, 8·9 in Londonderry, 20·3 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 14·0 per 1000.

The 365 deaths from all causes were 10 fewer than the number in the previous week, and included 44 which were referred to the principal epidemic diseases, against 53 and 57 in the two preceding weeks. Of these 44 deaths, 21 resulted from infantile diarrhœal diseases, 9 from whooping-cough, 7 from measles, 5 from scarlet fever, and 2 from enteric fever, but not one from small-pox or from diphtheria. The mean annual death-rate from these diseases was equal to 1·9, against corresponding rates of 1·6 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily declined from 74 to 33 in the five preceding week, further fell to 21 last week, of which 11 were registered in Dublin and 6 in Belfast. The deaths referred to whooping-cough, which had fallen from 9 to 3 in the four preceding weeks, rose to 9 last week, and comprised 8 in Belfast and 1 in Cork. The 7 fatal cases of measles, which were all registered in Belfast, were 3 in excess of the average in the four preceding weeks. The deaths attributed to scarlet fever, which had been 2, 4, and 7 in the three preceding weeks, fell to 5 last week, of which 2 occurred in Waterford. The fatal cases of enteric fever were recorded in Belfast and Ballymena.

The deaths referred to diseases of the respiratory system, which had been 58, 56, and 71 in the three preceding weeks, fell to 60 in the week under notice. Of the 365 deaths from all causes, 126, or 35 per cent., occurred in public institutions, and 4 resulted from different forms of violence. The causes of 10, or 2·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes last week did not exceed 1·0 per cent.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Care of the Wounded at a Field Hospital.

I PROPOSE to describe from personal experience,[1] and in brief language, the manner in which the wounded are being handled in the French lines. In the first instance, during the rush of wounded that follows an action, all that can be done in a field hospital is to apply an antiseptic dressing, or adjust any first aid dressing that may have already been applied on the field of battle. The dressing for the purpose with which all our soldiers are supplied is an excellent one so long as the bandage which serves to keep it in place is not pulled too tight—which will happen, but which should of course be detected by the usual symptoms. At the ambulance hospital the ligatures necessitated by persistent hæmorrhage should be applied, and fractures set; this is done. Where wounds have been soiled by earth or by contact with filthy straw in ambulance wagons a preventive injection of anti-tetanic serum is the regulation treatment; it must be given at once to be of any effect. The immediate extraction of bullets and shrapnel is undertaken at the ambulance hospital in simple cases, but location of the projectile by radiography and radioscopy can only be seriously undertaken in clearing hospitals, or better still in the hospitals at the base, though the general advice is that it should be attempted at the earliest opportunity. The Service de Santé possesses a certain number of radiography plants, very well fitted up, mounted on strong automobiles and accompanied by specialists. But the development of the plates calls for a more peaceful environment than is found in hospitals within the collecting zone, and there is natural reluctance to send these costly equipages, of which the number must be limited, too near the fighting line. Already some of them have come under fire. Amputations are rarely done at the ambulance hospitals, save where there is vast destruction of the limbs by shell, with shattering of the bones and conditions that must be followed by immediate and abundant suppuration. The extensive wounds caused by shrapnel rapidly become septic. As long as only the skin and muscles are affected methodical disinfection by hydrogen peroxide solution or tincture of iodine is very valuable, and the employment of hot air, iodine vapour, combined with a current of oxygen will in more or less time lead to good cicatrisation. When there are fractures with much bone exposed the chance of saving the limb becomes very slender, and in many cases delay, with the hope of escaping amputation, is harmful to the patient, who undergoes the operation in the end after long suppuration. Gaseous gangrene, a condition which is almost unknown in civil practice, has occurred in some cases, and is an ominous complication. Prompt amputation does not always avoid a fatal issue, as the tissues have often been infected beyond the apparent limits. Injections of oxygen made into the deep parts of the tissues, according to the method of Dr. Thiriar, of Brussels, will here render signal service, but tubes of compressed oxygen are not at hand everywhere for immediate use. In default of these, injections of hydrogen peroxide

[1] Our regular Paris correspondent writes in his covering letter as follows: "Je suis encore hors de Paris, où je suis retenu par mes fonctions de médecin chef d'un hôpital à la frontière."

can be made into the tissues beyond the infected area. General Delorme, Inspector General of the Military Medical Service, has quite properly and publicly insisted upon the value of this excellent technique. Unfortunately these injections are very painful, the solution for the sake of preservation being always acid; if it becomes alkaline it decomposes. Sodium perborate, however, allows of neutralisation without decomposition, and its use ought to be widely advocated. Wounds caused by rifle bullets, when they do not hit the cranium, the thorax, or the pelvis, and do not break any bones, are often wonderfully benign. Grooved or channelled shot wounds usually heal spontaneously within a few days if care has been taken promptly to cover up the two orifices; the bullet is, as a matter of fact, rendered aseptic by the temperature which it reaches during its flight. These wounds only become infected where a portion of the uniform is carried into the tissue by the projectile, or if the openings of the wound are contaminated by soil or the contact of dirty garments. This is now universal experience in war. Dum-dum bullets are stated to be employed by the Austrians, having been found in their cartridge pouches; too much stress, however, must not be laid upon the statement with regard to these bullets in view of the extensive damage which may be caused by an ordinary shot. The German bullet is made of compressed lead surrounded by a rather thin metallic cover, and it is not rare for this latter, when in contact with a bone, to be detached from the body of the projectile and become jagged and split up into many fragments without any explosive force or any cut-off end of the shot being required to produce such effect. The damage done is then formidable. One of these misshapen bullets can burrow a hole in a thigh large enough to take the fist; the injury is, however, only the effect of an ordinary projectile. Bullets which happen to become deformed by a ricochet, or which rebound on a stone or on a wall, afterwards act in the same fashion. Beyond these cases an ordinary bullet during its flight may at a certain point in its course rock or see-saw on its axis; its base being heavier than its apex it describes then, not a right line or a regular parallel, spiral, or helical course, but receives a motion which causes it to produce a funnel-shaped or infundibular entry to the wound. All these facts must be known before deciding upon the existence or otherwise of an explosive or a soft-nosed bullet.

The late Emile Reymond.

I am unfortunately unable to mention here individually all my French *confrères* who have fallen victims to this cruel war, but I wish at least to record the recent glorious death of one of our most esteemed surgeons, Dr. Emile Reymond. Born in 1865 at Tarbes, he became interne of the hospitals in 1891. He was laureate of the Institute and member of the Faculty of Medicine and of the Assistance Publique, and held in turn the posts of chef de clinique at the Faculté, surgeon to the Hôpital de Sèvres, and later to the departmental hospital of Nanterre. At first he did much important work in gynæcology. With his master, Terrier, he then led the way in heart suture, and in 1903 the Association Française de Chirurgie commissioned him, with Terrier, to report upon the surgery of the heart and pericardium. He became first Deputy, then Senator, for the Department of the Loire. From the inception of aviation he enthusiastically devoted himself to aerial locomotion, soon taking rank among the leading pilots. At the outset of the war, in spite of his 49 years of age, he entered as a volunteer in the military flying corps, although he held the rank of médecin-major in the Medical Service. He fulfilled his duties with conscientiousness, courage, and self-sacrifice. While reconnoitring over the enemy's positions the Germans fired on his machine, and Dr. Reymond was seriously wounded. He descended between the German and French lines. He was at once picked up and removed to hospital, where he died of his wounds, not, however, before he had been able to convey the valuable information he had been sent out to seek. The Commanding-General decorated him on his death-bed.

Medical Affairs in Paris.

The meetings of the Académie de Médecine are naturally taken up with communications bearing on the surgery of war, and the diseases especially connected therewith. Recent communications made to the Academy of Sciences and the Academy of Medicine on the part of General Delorme, Inspector-General of the French Military Medical Service, by Dr. Tuffier, Dr. Capitan, Dr. Picqué, M. Walther, and Dr. Pierre Delbet, have, thanks to the press, quickly reached our medical officers in the fighting areas, and have proved very valuable. When the war is over the medical observations now accumulating will form material of the highest scientific interest. M. Walther has studied the etiology and prophylaxis of tetanus among the wounded in war, and M. Capitan wounds of the thorax induced by the German rifle ball. M. Tuffier, who was sent by the Ministry of War to the various military medical establishments, has communicated his conclusions on the surgery of war. M. Lucien Picqué has devoted attention to the preservation of the limb in cases of wounds of the soft parts and fractures of the shafts of the long bones. Professor Pierre Delbet has submitted to the Academy an apparatus that he has used for ten years for the treatment of complicated fractures of the arm, for which he claims great advantages, especially from the standpoint of conservative surgery, and which procures immediate relief from suffering. Under its use dressings are no longer painful and consolidation takes place under the best conditions, and more rapidly than with any other apparatus. Finally, the Academy has received a communication of a more peaceful character, relating to the use of the milk given by cows collected in concentration camps at Paris. The production of this herd exceeds 8000 litres a day, and is divided among 85 hospitals, mairies, and assistance bureaux. Professor Pinard finds that this milk gives universally excellent results.

Oct. 27th.

ROYAL FREE HOSPITAL: LONDON SCHOOL OF MEDICINE FOR WOMEN.—In consequence of the war it has been decided to postpone the annual dinner usually held on the second Wednesday in December.

MASTERSHIP OF THE COOMBE HOSPITAL, DUBLIN.—Dr. R. A. McLaverty has been elected Master of the Coombe Lying-in Hospital in succession to Dr. Michael J. Gibson, whose period of office ends in December. The post is much sought for, as the Coombe Hospital has in recent years gained much ground as a teaching centre.

Obituary.

ANTHONY TRAILL,

PROVOST OF TRINITY COLLEGE, DUBLIN.

Dr. Anthony Traill, Provost of Trinity College, Dublin, who died on Oct. 15th, though he never practised medicine, was, since 1869, a member of the medical profession. He was the first medical man to hold the office of Provost, and it is of interest to note that contemporaneously with his rule in Trinity College two of the four other colleges in Ireland of university rank—University College, Dublin, and University College, Cork—have also been ruled by medical men. Anthony Traill was born in co. Antrim in 1838. He entered Trinity College in 1855, graduated with high honours in 1860, and became a Fellow of the College in 1865. He devoted himself thereafter to making himself familiar with the sources of study in the professional schools of the College, and took in succession degrees in law and medicine. For many years he had a close association with the School of Engineering, and was himself a pioneer in the department of electrical engineering; he had an active share, with Lord Kelvin and others, in the construction of the Portrush and Giant's Causeway electric railway, the first of its kind in the world. In 1904 he was appointed Provost. He came to rule over his College at a critical period, and it is in large part due to his firmness and courage that the College emerged unscathed and strengthened from the melting-pot of Irish university institutions. He gave cordial assistance to the Government in its fruitful endeavours to solve the problem of Irish university education. During his provostship several notable reforms took place in Trinity College, of which perhaps the admission of women on equal terms with men was of the greatest public interest. In the progress of the medical school Traill took an active interest, and he entered with zest into the arrangements for the bicentenary celebrations in 1912. Soon after his elevation to the provostship he was elected an Honorary Fellow of the Royal College of Physicians of Ireland and of the Royal College of Surgeons in Ireland. He held honorary doctorates from the Universities of Glasgow, Aberdeen, and St. Andrews.

A man of affairs rather than a scholar, Dr. Traill had great administrative ability and indomitable energy. Without much grace of manner he had solid qualities of head and heart. He had no distaste for controversy, but he was singularly free from personal bitterness. Neither friend nor opponent ever doubted his absolute honesty and straightforwardness. Greater scholars than Traill have guided the fortunes of Trinity College in the past; none has served her with more single-minded and untiring devotion; few have rendered her more solid service.

A well-known Belfast physician sends us the following more intimate notes upon the career of Dr. Traill: "Traill was a typical Ulsterman, while since the foundation of Trinity College, Dublin, by Queen Elizabeth in 1592, although he was the forty-fifth Provost, he was only the fourth layman to occupy this position and the first and only graduate in medicine to be so honoured. He was a very strong personality. He had a splendid academic standing, he held every position of importance at Trinity College, was a graduate in arts, law, and medicine, and when he gained the coveted fellowship he presented himself for examination in mathematics, experimental science, Hebrew, and philosophy. He was also a very favourite tutor, and during his years as tutor Fellow he had over 900 pupils. As an athlete he was in his time captain of the University cricket eleven; he was one of the founders of the college races in 1857; on 14 different occasions he was racquet champion of his University, holding this cherished position when he was actually 51 years of age; for many years he shot at Wimbledon with the Irish eight; and in more recent times he was an enthusiastic golfer, his handicap when he was 65 years of age being only five. Further, he was a good shot, an excellent fisherman and mountain climber, and a member for many years of the Alpine Club. Then he was an excellent man of business, and Trinity College owes much to his splendid work in ably re-arranging her finances. But, above all else, Dr. Traill was a born fighter on behalf of any cause or person he supported, and one of the very best of friends. Under a pugnacious exterior there beat the kindest and truest of hearts."

LIBRARY OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—The annual report recently issued by the librarian of the Royal College of Physicians states that changes have recently been made in the structure of the College which will tend to the greater comfort of readers. One of the committee rooms has been enlarged and the books formerly stored in it have been moved to a new gallery in the library. The entire sum available each year for purchases is only £110, of which £92 are spent on the purchase and binding of journals. It is obvious that the remainder is inadequate to keep up a modern supply of books, and the library committee appeals to Fellows to assist the College by gifts of books. The librarian is endeavouring to make as complete as possible the collection of medical works by Irish writers and of medical works published in Ireland.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held last week Mr. J. W. B. Hodsdon was elected President of the College for the ensuing year. Mr. Hodsdon has been a member of the Council and the representative of the College on the General Medical Council for a number of years. At the same meeting the following gentlemen, having passed the requisite examinations between July 6th and 11th, were admitted Fellows: Thomas Stevens Allen, M.R.C.S. Eng., L.R.C.P. Lond., London; Arthur James Ballantine, M.B., Ch.B. Edin., Cape Town; Norman Hay Bolton, M.B. Ch.B. Edin., Nottingham; Henry Harvard Davis, M.R.C.S. Eng., L.R.C.P. Lond., Glamorgan; Henry Ernest King Fretz, L.R.C.S. Edin. (triple qual.), London; William Gordon Goudie, M.B., Ch.B. Glasg., Glasgow; David Livingstone Graham, M.B., Ch.B. Glasg., Captain Indian Medical Service; John Donald Gunn, M.B., Ch.B. Edin., Edinburgh; Douglas James Guthrie, M.D. Edin., Edinburgh; Arthur Joseph Gordon Hunter, M.D. Edin., Linlithgow; John Brown Dalzell Hunter, M.B., Ch.B., Glasg., Captain Indian Medical Service; Frederic George Lloyd, M.R.C.S. Eng., L.R.C.P. Lond., London; Richard Mainwaring Mainwaring-White, M.D. Edin., Cheshire; Francis Leslie Nash-Wortham, M.R.C.S. Eng., L.R.C.P. Lond., Edinburgh; John William Pell, L.R.C.S. Edin. (triple qual.), Hupeh, Central China; Garfield Arthur Platt, L.R.C.S. Edin. (triple qual.), &c., Ontario, Canada; Edmund Lewis Reid, M.B., Ch.B. Aberd., Banffshire; James Wilson Richardson, M.R.C.S. Eng., L.R.C.P. Lond., &c., Calgary, Alberta, Canada; Sydney James Simpson, M.B., Ch.B. New Zealand, Essex; Leslie Joseph Thompson, M.B., Ch.B. New Zealand, Feilding, New Zealand; Denis Byrne Walshe, M.B., B.S. Melb., Thames, New Zealand; Russell Ernest Walker, M.B., Ch.B. Edin., Peterborough; and Walter Quarry Wood, M.B., Ch.B. Edin., Edinburgh.

Correspondence.

"Audi alteram partem."

SIR JAMES Y. SIMPSON AND ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—In his delightful Harveian Oration Sir R. Douglas Powell attributes the discovery of anæsthesia to Sir James Y. Simpson. By a curious coincidence, on the very day on which I heard the address I received from Sir Alexander Simpson the proof sheets of a letter written in April, 1870, to Dr. Bigelow, of Boston, in which Sir James Simpson repudiates anything so "wild or extravagant" as that he used chloroform as an anæsthetic before ether. Thirteen months had elapsed; and later in the letter, discussing the rival claims of Jackson, Wells, and Morton, he decides in favour of Morton, saying that he was "the gentleman to whom I believe the profession and mankind are really and truly indebted for first reducing into practice the production of insensibility by ether inhalation, with the object of annihilating pain in surgical operations." The splendid work which Sir James Simpson did in those early days can never be forgotten, but it is unjust to his memory to attribute to him, as is so often done in this country, a discovery which had become "the blessed possession of the whole world" (to use a phrase of Professor Welch) before the introduction of chloroform.

I am, Sir, yours faithfully,

Oxford, Oct. 26th, 1914. WILLIAM OSLER.

WANTED, A DIAGNOSIS.

To the Editor of THE LANCET.

SIR,—Dr. Norman Butler's two cases, observed with care and reported in THE LANCET of Oct. 24th, are so lucidly described as to make their diagnosis for the neurologist a matter of comparative simplicity. They belong to a group of acute toxi-infective diseases of the nervous system in which are distinguished four main subdivisions—acute ascending meningomyelitis, acute toxic polyneuritis, acute poliomyelitis or polioencephalomyelitis, and Landry's paralysis.

The first of these is excluded mainly by the absence of any sensory changes and the absence of any sphincter impairment of any duration. The second is excluded partly for a similar reason—viz., the absence of sensory symptoms or signs such as are constant in multiple neuritis, though it is true Dr. Butler's second case had transient pains. The third class, acute poliomyelitis, is more difficult to exclude, for there is an ascending type the symptoms of which are not unlike those of Dr. Butler's cases. Even in the ascending cases, however, the affection is not, as a rule, as symmetrical as it appears to have been in his, and, further, the excellence of the recovery in them is far from common in universal poliomyelitis.

Dr. Butler's cases come most readily under the category of Landry's paralysis, acute ascending motor paralysis of central origin. It is true that in various recent epidemics of poliomyelitis ascending cases have been described as of the Landry type, and some have gone so far as to deny any clinical or pathological entity to Landry's paralysis. But the present state of our knowledge does not justify this generalisation, while it must not be forgotten that Farquhar Buzzard and others have recorded cases of this acute ascending motor paralysis in which the infective agent was not the virus of poliomyelitis. There are, besides, certain minor points in the type of motor palsy which are met with in Landry's paralysis and not in poliomyelitis.

As to the morbid agent in Dr. Butler's cases, it is unwise to hazard any suggestion. Whether it was toxic or infective must remain obscure, although examination of the cerebro-spinal fluid might have proved of considerable value. In any case the condition was probably one of infection of the ascending lymph streams through the spinal cord and lower brain stem, involving almost exclusively the ventral cornua of grey matter. The explanation of this specific action is still unknown; but in certain cases the syphilitic virus has been found to invade the ventral horns exclusively in a similar fashion—so-called syphilitic poliomyelitis. A case of this sort, in which the pathological findings corroborated the clinical view taken of the case, was published by Professor Léri, of Paris, and myself in the *Nouvelle Iconographie de la Salpêtrière* (1904).

Dr. Norman Butler is to be congratulated on the precision with which he has worked out these two interesting cases, which are of undoubted documentary value.—I am, Sir, yours faithfully,

S. A. KINNIER WILSON.

Harley-street, W., Oct. 24th, 1914.

SHELL WOUNDS IN MODERN NAVAL WARFARE.

To the Editor of THE LANCET.

SIR,—In the article with the above title which I jointly contributed to your issue of last week a mistake has crept in which I should be grateful if you would correct. The vaccine was not made by Messrs. Parke, Davis, and Co., but was prepared in the inoculation department of St. Mary's Hospital and under the supervision of Sir Almroth Wright, who has generously sent a stock for Admiralty use through the Medical Director-General.

I am, Sir, yours faithfully,

BRYAN PICK,

Shotley, Oct. 26th, 1914. Staff-Surgeon, R.N.

THE NATIONAL MEDICAL UNION AND THE £90,000 WINDFALL TO PANEL DOCTORS.

To the Editor of THE LANCET.

SIR,—In the interest of the general public and the medical profession the council of the National Medical Union has deemed it expedient to lodge with the Insurance Commissioners a protest against the allotment of their £90,000 medical benefit surplus. This surplus has accrued because nearly a quarter of a million insured persons would not elect a panel doctor to attend them during illness, and because the authorities entrusted with the

fulfilment of the National Health Insurance Act did not distribute those insured persons severally amongst the panel doctors, and did thus disregard Section 15 (2) (*d*) of the Act, which provides for such system as will secure "the distribution amongst, and, so far as practicable, under arrangements made by, the several practitioners whose names are on the lists, of the insured persons who after due notice have failed to make any selection, or who have been refused by the practitioner whom they have selected."

Moreover, according to Section 14 (1) of the Act, it is provided that medical benefit shall be in all cases administered by and through the Insurance Committees and not by the Commissioners.

I am, Sir, yours faithfully,

VIVIAN T. GREENYER,

Oct. 21st, 1914. Chairman of Council of National Medical Union.

DIEPPE AS A MILITARY HOSPITAL BASE.

To the Editor of THE LANCET.

SIR,—In your issue of Oct. 3rd there is an article under the above heading to which the Baroness Delaborde-Noguez has just called my attention. She wishes me to say that all the wards at the Casino are thoroughly warmed by stoves, and this I can testify to myself. It is a pity that Dr. Knowsley Sibley was led into the error of supposing it would not be so. Further, a regular staff of nurses are on duty at night at the Casino, and at the College the nuns attend to the wards at night. My work for some weeks past has been at the College, so I can speak from experience. There are now a number of duly qualified nurses at the Dieppe hospitals, and the doctors here greatly appreciate the excellent service they render.

During the time I have been here no wounded have arrived during the night. For the last week we have had none at all, and at least half the beds for wounded have been unoccupied.

I shall esteem it a favour if you will allow me space for this letter. I can quite understand how difficult it must be for anyone paying only a flying visit to this town of hospitals—there are 16 in Dieppe itself—to avoid occasional inaccuracies.

I am, Sir, yours faithfully,

ELIZABETH LE BLOND.

Hotel Chariot d'Or, Dieppe, Oct. 22nd, 1914.

IMPERFECTIONS IN THE CUMBERLAND INFIRMARY.

To the Editor of THE LANCET.

SIR,—Sir Henry Burdett is correct in stating that on the cover of the report of the Cumberland Infirmary for 1913 there may be found a slip of paper which declares "there is accommodation for 150 in-patients," but owing to lack of funds only 102 beds are authorised for occupation. It is not, therefore, incorrect to describe our hospital as a small provincial institution. We could not put up more than 130 patients at most (unless on balconies or open-air spaces), even if our finances permitted. Thirty beds in the disused portion of the infirmary have recently been inspected by the War Office, but only 20 have been considered fit for occupation by wounded or sick.

Sir Henry Burdett tells us that his report on our infirmary is intended to be republished, with some hundred others, as a faithful record of the condition in which he found it in June, 1914. His visit lasted at most two hours, and I cannot regard his report as in any sense a faithful record. In the visitors' book of the infirmary over his signature I find the following:—

> It has been a pleasure to inspect this hospital after 21 years. Since 1892 much has been done to improve the hospital and to add to its efficiency. The working and planning of the new portions of the hospital would be greatly aided if the ward units were made complete by the addition of a suitable airy temporary larder to each ward where the food can be kept, by the provision of a housemaid's cupboard, of patients' clothes cupboards, and other details which are now included in modern hospital construction. The accommodation for the nurses is attractive and good. That for the domestic staff a great improvement on what formerly prevailed, but I should like to see one good room comfortably furnished as a sitting-room for the members of this staff.

When Sir Henry Burdett's faithful record appears will he include this impression? Or will he republish the following remarks from *The Hospital*:—

> Administratively, however, it seemed to us that it has been changed sadly for the worse. ..... It was a sad disappointment to find an absence of the old spirit and atmosphere of 20 years before. ..... We are convinced something is radically wrong at this institution.

Satisfied as Sir Henry Burdett appears to have been after his inspection of the Cumberland Infirmary in June, 1914, some unexplained change came over him.

Sir Henry Burdett has condemned our mortuary as having been "erected on a defective plan," and says that every properly organised voluntary hospital has a mortuary chapel or view room, so that "reverence for the dead and due consideration for the living may always be secured." The mortuary in the Cumberland Infirmary was built in 1903, together with a post-mortem room, at a cost of £500, and stands by itself at some distance from any ward. The mortuary or "view room" resembles a small chapel, having an open-timbered roof, a red-tiled floor, with leaded and coloured glass windows at each end. In it four low beds, supplied with fine hemstitched linen, can be found and a little altar table upon which rest a brass cross and vases for flowers placed beneath one window and a "prie Dieu" below the other window. In this "view room" I maintain that all due "reverence for the dead and due consideration for the living" can be secured.

It seems that Sir Henry Burdett cannot understand that in our one clinical room we have all that we require at present and our existing medical staff could not conveniently utilise more than one such room. It may be pointed out to Sir Henry Burdett that if our finances were in a prosperous state we should like to provide an X ray room of three times the size of the one we now have, and that we have no room set apart for the honorary dental surgeon. These and other defects could be remedied, not so much by the possession of the "old spirit and atmosphere" (as Sir Henry Burdett might think) as by the acquisition of increased funds.

I am, Sir, yours faithfully,

Carlisle, Oct. 26th, 1914. H. A. LEDIARD.

*** This correspondence must now cease.—ED. L.

THE WAR.

THE ARMY SANITARY COMMITTEE.

The constitution of the Army Sanitary Committee is as follows:—

Brigadier-General F. J. Anderson, R.E.

Arthur Newsholme, M.D., C.B. (Medical Officer, Local Government Board).

Colonel W. H. Horrocks, M.B., B.Sc. (Expert in Sanitation, Army Medical Advisory Board).

Sir Frederick Treves, Bart., G.C.V.O., C.B.

John Robertson, M.D., B.Sc. (Medical Officer of Health, Birmingham).

Henry R. Kenwood, M.B., F.R.S.E. (Civil Expert in Sanitation, Army Medical Advisory Board).

Major C. E. P. Fowler, F.R.C.S., Royal Army Medical Corps (late Officer in Charge, School of Army Sanitation, Aldershot).

General Anderson is the chairman and Mr. Edmond T. Gann will act as secretary.

MENTIONED IN DESPATCHES.

The names of officers in the Royal Army Medical Corps who have been mentioned in Sir John French's despatches under the designation of "General Headquarters Staff, &c.," are given below. From the details supplied in the *Gazette* it was only possible to compile last week a complete list of regimental medical officers and of those specifically grouped together in the list as officers in the Royal Army Medical Corps.

Surgeon-General T. P. Woodhouse, Colonel E. H. L. Lynden-Bell, Colonel T. J. O'Donnell, D.S.O., Colonel H. S. Hickson, Colonel R. Porter, Colonel R. H. S. Sawyer, Brevet-Colonel F. Smith, D.S.O., Lieutenant-Colonel G. H. Barefoot, Lieutenant-Colonel W. W. O. Beveridge, D.S.O., Lieutenant-Colonel F. S. Clark, Lieutenant-Colonel G. Cree, Lieutenant-Colonel C. Dalton (killed), Lieutenant-Colonel J. J. Russell, Major M. H. Babington, Major E. A. Bourke, Major B. B. Burke, Major A. Chopping, Major S. L. Cummings, Major M. H. G. Fell, Major J. V. Forrest, Major J. S. Gallie, Major J. G. MacNaught, Major G. A. Moore, Major C. D. Myles, Major E. Ryan, Major E. B. Steel, Major F. A. Symonds, Major A. H. Waring, Major A. L. A. Webb, Major A. B. Smallman, Captain A. C. Amy, and Captain A. L. Otway.

THE CASUALTY LIST.

THE following names of officers in the Royal Army Medical Corps have appeared in casualty lists since our last issue:—

Wounded: Captain R. E. Porter and Lieutenant H. de C. Dillon.

Missing: Captain B. Johnson and Lieutenant J. L. Jackson.

Captain G. H. Rees, previously reported missing, is now unofficially reported a prisoner of war. Captain D. M. Corbett is unofficially reported a prisoner of war. Cards have been received from Captain S. Field and Lieutenant J. E. Hepper stating that they are prisoners of war at Torgau and are well.

The Secretary of the Admiralty announces that information has been received that Staff Surgeon Louis L. Greig, R.N., of the Royal Naval Division, is a prisoner of war in Germany.

During the operations in Nigeria and the German Cameroons Dr. W. A. Trumper and Dr. J. Lindsay, of the West African Medical Staff, are officially stated to have been captured while attending to the wounded, and Dr. W. S. Clark, also of the West African Medical Staff, was captured at a later date while attending to the wounded, but has since been released.

THE WAR AND THE DRUG SUPPLY.

During the past few weeks the drug market has recovered somewhat from the depression which set in when the war began. Since the note on this subject appeared in THE LANCET of Sept. 19th the medicinal products which have declined in value have exceeded in number those which have advanced, and this is a remarkable fact in view of the existing conditions. Of course, prices on the whole are still greatly above the normal, but it is very satisfactory to know that the advancing tendency which affected so many drugs has been checked. The reasons for this are several. Quite substantial shipments of many of these drugs, of which new supplies were hardly expected, have been arriving at British ports, from which it may be inferred that neutral countries were fairly well supplied with synthetic products and fine chemicals. Then again there is strong evidence that medical practitioners, adopting the suggestion of the Home Office and insurance authorities, have been prescribing whenever practicable and without prejudice to their patients suitable substitutes for German drugs. Thus the consumption of these drugs has been below the normal, while fresh supplies have not been entirely stopped. There are, however, some products which have continued to advance in price. Notable among these are atropine, the extremely high value of which is due to the scarcity of belladonna root; carbolic acid, which is three times its normal price owing to the very heavy demand for this substance, which is required, not only for disinfecting purposes, but for the manufacture of explosives; and corrosive sublimate and other salts of mercury, which have advanced in sympathy with quicksilver. There are some few products, of which menthol is a notable example, which are even lower in price than at normal times, for the reason that supplies which would ordinarily have gone to Germany have been diverted to English ports. Another remarkable feature of the drug market is the comparatively low value of Norwegian cod-liver oil, which in spite of the situation in the North Sea is not substantially higher than that quoted before the war. Opium and its alkaloids, morphine and codeine, are also obtainable at comparatively low figures considering the very heavy demand for them occasioned by the treatment of so many wounded soldiers. The prices are naturally much above the normal in consequence of the disorganisation of the market for Turkish opium, but had it not been for the large supplies of Persian opium that have arrived in London prices would have been excessive.

JOINT RED CROSS COMMITTEE.

On the recommendation of the Duke of Connaught, Grand Prior of the Order, the King, as Sovereign Head, and the Queen, as President of the Ladies' Committee, of the Order of St. John of Jerusalem in England, and Queen Alexandra, as President of the British Red Cross Society, have expressed their approval of the immediate formation of a joint committee of the two organisations, which shall sit throughout the war, to secure coördination and united action in

work which is common to both bodies. The committee has been constituted as follows, and communications should be addressed to Room 70, 83 Pall Mall, S.W.:—

Appointed by the Order of St. John of Jerusalem — Adeline Duchess of Bedford, Lady Perrott, Colonel Sir Herbert Jekyll, K.C.M.G. (Chancellor), Colonel Sir Herbert Perrott, Bart. (Secretary-General), the Earl of Plymouth, Lieutenant-Colonel Sir Richard Carnac Temple, Bart., Sir John Hewett, G.C.S.I., and the Right Hon. Sir Claude Macdonald, G.C.M.G.

Appointed by the British Red Cross Society.—The Marchioness of Lansdowne, Georgina Countess of Dudley, Sir William Edmund Garstin, G.C.M.G., Sir Robert Arundel Hudson (chairman of Finance Committee), Sir Walter Roper Lawrence, G.C.I.E., Mr. Edward A. Ridsdale, the Hon. Arthur L. Stanley, M.V.O., M.P. (chairman of the Executive Committee), and Sir Frederick Treves, Bart., G.C.V.O.

NEW WAR OFFICE APPOINTMENT.

Colonel Michael W. H. Russell, R.A.M.C., has been appointed Deputy Director-General of the Army Medical Service, and to be temporary surgeon-general, in succession to Surgeon-General W. G. Macpherson, A.M.S., C.M.G., K.H.P.

THE CONTINENTAL MEDICAL PRESS AND THE WAR.

Nothing is more suggestive of the intense preoccupation of France in the struggle for national survival in which she is engaged than the state in which the *Presse Médicale* now appears. The first number to betray the changed state of affairs was published on August 12th. It begins with a paragraph explaining that owing to the early mobilisation of its editorial secretaries, and also to the events now filling the mind of every Frenchman, certain changes have been necessary. In a most stirring article M. Helme outlines the policy of the journal as one of assistance to those who are not at the front and yet wish with their whole heart to serve their country. For the consolation of such he quotes with approval the words of a surgeon just dead to the effect that "every battlefield is good to the man who desires to do his duty." All the articles and paragraphs in this and subsequent numbers deal exclusively with the war. There are several admirable lectures by Edmond Delorme, Medical Inspector-General of the French Army, and others on military surgery. Other paragraphs deal with the organisation of civil practice, of relief work, and so on. There are also directions for the execution of anti-typhoid vaccination. Details of Red Cross arrangements are given, and a very interesting column is devoted to replies to correspondents. An article from the *New York Herald* is quoted at length in which the allegations of the Germans with regard to dum-dum bullets are dealt with, the conclusion arrived at being that it is impossible to deduce from the mere appearances of wounds that such bullets have been used, and that in fact nothing but the discovery of unused dum-dum bullets can be held to prove the charge that has been advanced against the Allies. In this connexion may be quoted the opinion said to have been expressed by a German surgeon since the outbreak of war, and reproduced from one of the German journals in an American medical weekly, to the effect that the rifle bullet of the French army inflicts a clean and relatively humane wound. It is impossible to read the *Presse Médicale* without a sense of admiration for the passion with which the French nation has undertaken the task thrust upon it by the unscrupulous ambitions of the enemy. The German medical weeklies are still appearing. From these we learn that the health of the army is regarded as satisfactory, and that the medical organisation is thought to be equal to the heavy strain which is already being thrown upon it. The papers are reduced in bulk, and deal largely but not exclusively with military subjects. One reference to a British journal, the *Western Medical News*, published in Saskatchewan, may be permitted. Like the French journal alluded to, this is largely given up to war items. The editorial notes quote the words with which Professor Depage, of Brussels, opened the Fourth International Surgical Congress, to the effect that "it is the privilege of little Belgium to offer a meeting-place to the learned men of all nationalities, covered by Europe herself with the shield of peace and liberty." When these words were spoken few thought that within a few weeks one of the guarantors of that peace and liberty would be devoting all her energies to a ruthless campaign of violence and tyranny in the very land she had solemnly undertaken to protect.

OBITUARY OF THE WAR.

GEORGE CHARLES CUMBERLAND ROSS, M.B., B.CH. T.C.D.,

STAFF SURGEON, ROYAL NAVY.

Dublin students of the "nineties" will have learned with great regret that Staff Surgeon George C. Ross, R.N., is supposed to have lost his life in the disaster to H.M.S. *Hawke* on Oct. 15th in the North Sea. Ross was a student of Trinity College and the Richmond Hospital, and became qualified in 1899, graduating M.B., B.Ch., and B.A.O. of the University. He had obtained his B.A. degree two years previously. During his college career he nearly lost his life by a sailing accident in Dublin Bay. He was the eldest son of Surgeon-Colonel George Cumberland Ross, late I.M.S., with whom much sympathy is felt. He entered the navy as surgeon in 1901 and was promoted to be staff surgeon in February, 1909. He joined the *Hawke* on August 1st last, and there seems to be now no hope that he and his two medical colleagues, Surgeon G. W. M. Custance and Temporary Surgeon J. H. D. Watson, have survived.

WILLIAM ORMSBY WYNDHAM BALL, M.B., CH.B. T.C.D.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant W. O. W. Ball, who was killed on Sept. 26th during the battle of the Aisne, was born on Sept. 27th, 1889, at Palmerston Park, Dublin. He was the younger son of the late Henry Wyndham Ball. From St. Andrew's College, Dublin, he proceeded in 1907 to the University of Dublin, graduating B.A. in 1910 and M.B., Ch.B., B.A.O. in 1912. He had a distinguished career as a student in the School of Physic of Trinity College, and acted as resident pupil at Sir Patrick Dun's Hospital during his final year. In 1912 he obtained the L.M. diploma of the Rotunda Hospital. He was one of the first members of the medical unit of the Dublin University Officers Training Corps, which was established four years ago, and which has sent so many University men to the front in the present crisis. Lieutenant Ball entered the Royal Army Medical Corps in January, 1913, and before the outbreak of war was stationed at Longmoor. He was killed on the eve of his twenty-fifth

birthday while in the act of tending a wounded soldier. During the great retreat from Mons towards Paris he had already had several narrow escapes. Once whilst he was dismounted and dressing a wounded man his horse was shot; on another day a bullet passed through his water-bottle; while on a third occasion, when in charge of a stretcher party, a shell burst not 20 yards away on the spot where he had been standing a minute before. He was also hit by a spent bullet and several times by fragments of shells, but was uninjured. Whilst a student at Trinity College Ball was a noted hockey player and played for Ireland in six international matches during 1909 and 1910.

JOHN CROCKET, M.D., CH.B. EDIN.,
LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant John Crocket, who was killed in action with the Expeditionary Force at the age of 28, was the only son of Mr. William Crocket, of Balmaghie, Headmaster of Sciennes School, Edinburgh, and a nephew of the well-known Scottish novelist. He was educated at Watson's College, Edinburgh, and graduated M.B., Ch.B., at the University of Edinburgh in 1908. After graduation he acted as resident house surgeon at the Edinburgh Royal Infirmary, resident medical officer at Chalmer's Hospital, and house surgeon at the Royal Hospital for Sick Children, Edinburgh. He obtained his M.D. degree this year, the title of his successful graduation thesis being "The Noguchi Luetin Reaction." He received his commission as Lieutenant in the Royal Army Medical Corps in January, 1913, and was recently stationed at Edinburgh before leaving for the front. Lieutenant Crocket was a man of considerable force of character and individuality. During his student days he took a leading part in the affairs of the Edinburgh University and Dumfries and Galloway Society, and he was an enthusiastic golfer and lawn-tennis player.

THE BRITISH RED CROSS SOCIETY.—The summary of work for the week ending Oct. 28th, shows that the number of hospitals accepted by the War Office to date is 247, containing beds for 8077, including 1597 beds accepted during the past week, and distributed among the Army Commands as follows:—London, 606; Eastern, 2678; Irish, 189; Southern, 1834; Northern, 1270; Aldershot, 609; and Western, 891. A number of Red Cross Voluntary Aid Detachments are being utilised in connexion with these hospitals.

Sir Robert Borwick having generously promised £2000 a year, to be paid quarterly during the war, for the maintenance of sick and wounded Colonial officers in nursing homes, arrangements have been completed with the nursing homes of Miss Lancaster, 29, Wimpole-street, W., and Miss Pollock, 50, Weymouth-street, W., for the reception and treatment of Colonial officers. The surgical and medical staffs have now been completed, and the following is a roll of the names of those who have generously given their services in connexion with the above nursing homes:—Mr. Charters Symonds, Mr. C. A. Ballance, Sir Seymour Sharkey, Dr. H. P. Hawkins, Mr. Harold Gardiner, Mr. J. F. Jennings, and Dr. J. Brunton Blaikie; Dr. F. E. Shipway, Dr. Z. Mennell, and Dr. Arthur Bevan are the anæsthetists; Mr. A. D. Reid the radiographer; and Mr. J. Dudley Benjafield the bacteriologist.

The British Red Cross Hospital at Netley is gradually getting into working order as the contractors complete the huts. 100 beds are now available for patients, and a certain number of sick and wounded were admitted on Oct. 26th.

CHADWICK PUBLIC LECTURES: WAR PROGRAMME.—The trustees of the Chadwick Public Lectures announce the following programme for the coming three months. On Saturdays, Nov. 14th, 21st, and 28th, at 3 P.M., Dr. A. T. Nankivell will lecture at Bedford College, Regent's Park, on Camp, Ship, and Hospital Hygiene. On Fridays, Dec. 4th and 11th, at 8.15 P.M., Sir Ronald Ross, K.C.B., will lecture at the London School of Economics, Clare Market, Kingsway, on Government and Military Sanitation in the Tropics. On Fridays, Jan. 15th, 22nd, and 29th, 1915, at 5.15 P.M., Dr. F. M. Sandwith, Gresham professor of physic, will lecture at the Royal Society of Arts, John-street, Adelphi, on War and Disease. Admission will be free to all the lectures. With the sanction of the Medical Director-General of the Navy and by arrangement with the Surgeons-General of the respective ports a course of three Chadwick lectures on Naval Hygiene—(1) the Progress of Naval Hygiene and its Effects on the Health of the Navy; (2) the Health of the Ship; and (3) the Health of the Sailor—will be given by Professor W. J. Simpson, C.M.G., M.D., in the Mayor's Room, Town Hall, Portsmouth, on Fridays, Nov. 27th and Dec. 4th and 11th, at 9 P.M., and in the R.N. Hospital, Plymouth, on Saturdays, Nov. 28th and Dec. 5th and 12th. Further particulars of these and other Chadwick lectures may be obtained from the secretary at the offices of the Chadwick Trust, 8, Dartmouth-street, Westminster.

THE HISTORICAL MEDICAL MUSEUM: A WAR EXHIBIT.—A special exhibit of interesting objects and relics associated with naval and military surgery, nursing, and ambulance is being arranged at the Wellcome Historical Medical Museum in Wigmore-street. It will include miniatures, portraits, prints, autograph letters, commissions, and relics of famous naval and military surgeons, surgical instruments and appliances used in naval and military surgery in bygone times, also medical and surgical chests, cases and cabinets, &c., used in war time. Pictures, prints, and drawings of field ambulance work, military hospitals, appliances, and equipments will also be included. The curator would be glad to hear from medical practitioners who may be willing to lend relics, instruments, or objects of a similar character. Any objects lent will be treated with the greatest care and insured against loss or damage. Particulars and descriptions of loans should be sent as early as possible, addressed to the Curator, the Wellcome Historical Medical Museum, 54A, Wigmore-street, London, W.

THE WORK OF THE VOLUNTARY AID DETACHMENTS IN KENT.—A correspondent writes: "The organisation of the V.A. Detachments in Kent has been put to the test and stood the strain very well. On Oct. 14th at midnight, for example, certain detachments were warned that 4000 Belgian wounded had been landed at Folkestone. The following relates to the work at a certain small town in Kent where 50 cases were sent to a large empty country house. The wounded arrived at 10 A.M., notice of their arrival being given only half an hour in advance. Order for 'mobilisation' had been received at midnight; the house was then quite empty, but clean. By 9 A.M. all beds were ready and equipment assembled for clothing, feeding, and dressing wounds. The resident medical officer had been fetched by car from an adjacent county and was on duty at 6 A.M. The nurses, cooks, and male orderlies were in attendance, and the conveyance of wounded from the station was carried out by one ambulance for three stretcher cases and a number of cars. A receiving tent had been pitched, equipped with a bath, and by noon the weary, exhausted men were all in bed, washed and fed, and all wounds were dressed by 8 P.M. The wounded had been mostly cleared from base hospitals in Ostend, Ghent, and Antwerp, and none of them had been attended for three or four days. The injuries comprised several severe perforating rifle wounds of the elbow joint, and various compound fractures of the lower arm and of the carpus and metacarpus. There was a case of rifle wound perforating the base of the skull from a point anterior to the left pinna to a point on the opposite side of the nose; this injury had produced severe pain in the branches of the third nerve and acute delirium, probably the result of pain, exhaustion, and mental distress, as there were no signs of meningitis. A number of minor

wounds and cases of subacute rheumatism brought the total to 54. One severe case of tetanus manifested itself within 24 hours in a very bad septic wound of the elbow-joint. Intravenous injection of antitetanus serum was at once made, followed by large rectal injections of a mixture of normal saline and sulphate of magnesia, but the case was very acute and terminated fatally within two days. Considering that the handling of such a large body of patients was performed by amateurs under the lead of one trained nurse the organisation deserves great credit. And I learn that the same success has been made in the other detachments of the county."

TRANSPORT OF THE WOUNDED.—In three days, Oct. 24th to 26th, a number of hospital ships arrived at Southampton. They brought about 2000 invalid and wounded troops, who were sent to hospitals in various parts of the country. Among the wounded were a number of Belgians and Germans. Thoughtful provision is shown to the wounded by the distribution, as the trains are leaving the Southampton Docks for the various hospital centres, of cigarettes, tobacco and pipes, and bars of chocolate, a kindness which is very much appreciated.

WOUNDED SOLDIERS IN IRELAND.—On Monday last the Bibby liner *Oxfordshire*, fitted as a hospital ship, reached Queenstown from Boulogne, carrying some 26 wounded officers and 700 wounded non-commissioned officers and men. They belonged to some 21 different regiments, including the Connaught Rangers, the Leinsters, the Royal Irish, the Munsters, and the Inniskillings. Of the patients 326 were sent to Dublin, 16 to Youghal, 20 to Waterford, 10 to Buttevant, 50 to Limerick, 25 to Fermoy, and 250 to Cork. Special ambulance trains ran to Cork and Dublin.

THE FORTH NAVAL HOSPITAL. — A fully equipped emergency naval hospital was offered soon after the outbreak of war by an anonymous donor and has been accepted by Queen Mary and Princess Christian. The site selected for the building is in close proximity to the Royal Naval Hospital at South Queensferry, and within the remarkably short period of some eight weeks the extensive range of wood and corrugated iron buildings was completed. The building comprises a large central administrative block of eight rooms for the accommodation of the surgical and medical staff. From the centre of each side and from three of the angles of this central building radiate the wards, messroom, kitchen, and operating theatre. The operating theatre has been constructed according to the latest requirements, and attached to it are a dispensary, anæsthetist's room, sterilising room, and a dark room for X ray work. There are four wards. The hospital building also comprise a detached commodious set of apartments for the accommodation of the staff, an electric light installation, and an ambulance shed.

ROYAL MEDICAL BENEVOLENT FUND AND THE WAR.—In consequence of the war the College Council Club of the Royal College of Surgeons decided not to hold their usual dinner this quarter, but instead a cheque of 30 guineas has been contributed to the Royal Medical Benevolent Fund, an example which should be largely followed by those who had intended to hold dinners and festivals of the kind. The medical profession will certainly be hit hard by the war in many ways, and already special demands upon the fund are being made, of which the following is a specimen. A young doctor, only seven years in practice and recently married, having volunteered for the war, was killed in the field within the first week, leaving a widow and two children in great temporary distress. This is but an example of many distressing cases, and the fund will find it difficult to deal with them as liberally as it would desire without special help and generous support.

THE SECOND SOUTHERN GENERAL HOSPITAL.—A correspondent writes:—"Ever since the first batch of wounded from the battlefields of Mons, Cambrai, and so on, were admitted to this hospital early in September the staff have been kept busy. At the present time there are about 600 patients, or more if the convalescent branch at Bishop's Knoll be included. The largest class is composed of wounded and sick from the Expeditionary Force. The results of treatment have been gratifying on the whole, and so far no patient has died from wounds in the hospital. Practically the only mortality, indeed, has been due to pneumonia occurring among the recruits. There are 200 Belgian soldiers, many of whom had been moved hastily from one hospital to another in their own country. The great majority of these men are doing well, though several are severely wounded. Almost all of them have heard nothing of their families for weeks, and do not even know whether their wives and children are still alive. As has been already explained, it has been unavoidably necessary to divide the hospital into two parts. The smaller city division is full, but the larger Southmead portion, installed in the new premises of a workhouse infirmary, seems to be susceptible of almost indefinite expansion."

PROFESSIONAL CLASSES WAR RELIEF COUNCIL.—As we go to press we are asked to draw the attention of our readers to an organisation which has been formed with the above title for the practical assistance of members of the professional class who are in distress through the stringent conditions brought about by the war. The object of the council is to seek out such cases, and by advice and, where necessary, by assistance to render what help is possible. The council contains representatives from the chief professional institutions and from the societies which already exist for the organisation of relief, and its object is to coördinate, without any attempt at controlling, the activities of these institutions. In the directions of education of children, training for employment at home or in the colonies, maternity assistance, and the provision of temporary employment, it is hoped that the council through its special committees will be able to deal with each family as a unit, and thus help the dependents of professional men and women in a more effective and economical way than would be possible by mere grants of money. The medical members of the council, whose offices are at 13 and 14, Prince's-gate, London, S.W., are Sir John Tweedy and Dr. Samuel West, president and treasurer of the Royal Medical Benevolent Fund, and Dr. Mary Scharlieb, and further information as to the objects and methods of the council will be furnished on application to the honorary secretaries.

THE WELSH MILITARY HOSPITAL.—We have so far not described this base hospital, the Welsh Hospital, which was inaugurated at a largely attended public meeting held at Cardiff on August 11th, under the presidency of the Lord Mayor (Mr. J. Robinson, M.R.C.S., J.P.). Through the medium of the British Red Cross Society it was offered, on behalf of the Principality, to the War Office, for service with the Expeditionary Force, by H.R.H. the Prince of Wales. The offer was accepted, and it was requested that the hospital should be located in the first place at Netley, to go overseas later when required. The Welsh Hospital is therefore now situated on the recreation ground of the Royal Victoria Hospital—a very healthy spot. It was ready to receive patients on Oct. 26th. The buildings of the hospital are of wood and galvanised iron and are portable. The honorary architects are Messrs. E. T. and E. Stanley Hall, of London, the architects of the Manchester Royal Infirmary and the Welsh National Memorial.

The hospital has accommodation for 104 patients in four ward pavilions, each containing a 24-bedded ward, two single-bedded wards, and the usual accessory rooms. The other pavilions are: Entrance (in which is included post-mortem room and mortuary), administrative, operating theatre, pathology, X rays, and dispensing, mess rooms, kitchen and stores, laundry, staff quarters. The different pavilions are linked up by an open corridor. The operating theatre has been specially constructed. Heating is by gas and by anthracite stoves, lighting by electricity, hot water-supply from "calefonts," and the sanitary fittings connect up with an adjacent drain.

The total staff numbers 48. The commanding officer and senior surgeon is Lieutenant-Colonel A. W. Sheen, R.A.M.C.(T.F.), surgeon to King Edward VII. Hospital, Cardiff. The other medical officers are Mr. Fergus Armstrong, M.D. Edin., F.R.C.S. Edin., Mr. T. Garfield Evans, M.D. Lond., Mr. Sydney J. Rowlands, M.D. Liverp., and Mr. Bernard G. Klein, M.D. Oxon. The quartermaster is Mr. E. J. August, and all these officers have been given temporary commissions in the Royal Army Medical Corps. Four senior medical students are engaged as dressers, and the rest of the male staff consists of a sergeant-major, two sergeants, and 12 orderlies. The matron is Miss M. Martin,

who served with the Welsh Hospital in the South African War, and there are 12 nursing sisters, a housekeeper, and a domestic staff. The Earl of Plymouth is the President, the Lord Mayor of Cardiff chairman of the executive committee, and Mr. C. Hope the honorary general secretary.

The response to the appeal for funds signed by the Lord Mayor of Cardiff and Sir W. J. Thomas, honorary treasurer of the hospital, was immediate and enthusiastic, over £10,000 being subscribed in a week. The sum asked for is £25,000, and this amount has nearly been reached. £250 is regarded as endowing a bed to be named after the donor, and there are already 62 such endowed beds. All Wales has taken part in the movement, and many beds are endowed from North Wales. Sir William James Thomas endowed ten beds, and Mr. David Davies, of Llandinam, four beds; the Earl of Plymouth and the Marquis of Bute each two beds. A ladies' committee, under the chairmanship of the Lady Mayoress of Cardiff, have obtained garments and linen for the hospital estimated to be worth £1000. When required the hospital is ready to pack up and move as far as its furniture and equipments are concerned at short notice. The buildings will take longer to move, and perhaps existing buildings will be occupied in the new location. During its sojourn at Netley the staff will be further trained in drill, discipline, and duties in connexion with a military hospital under an experienced commanding officer, so as to render the hospital thoroughly fitted for any work it may be called upon to do.

GERMAN MEDICAL CASUALTIES.—The first German official casualty list of military surgeons is stated to include the names of 74 killed, 37 wounded, 13 missing, 3 prisoners, and 8 died from sickness. According to a German periodical the losses of the German military medical staff during the war of 1870 were 66 in all, of whom 9 were killed outright, 2 died of wounds, and 55 died from disease. The Austrian medical corps are stated to have lost during the present campaign 8 killed, 25 wounded, and 1 missing, while 22 are suffering from illness of various kinds. A newspaper correspondent in Copenhagen announces that already 118 military surgeons have been decorated with the German Iron Cross.

Mr. Robert Fox-Symons has been added to the Anglo-French hospital committee which was formed recently for the purpose of coördinating British offers of help for the French sick and wounded. Since Mr. G. H. Makins's departure for the front as consulting surgeon to the Forces Mr. Fox-Symons has been in charge of the department of the British Red Cross Society which deals with auxiliary home hospital accommodation.

THE NATIONAL INSURANCE ACT.

LOCAL MEDICAL COMMITTEE FOR THE COUNTY OF LONDON.—At a meeting of this Committee on Oct. 21st, at the offices of the Metropolitan Asylums Board, Dr. James Galloway in the chair, a report was considered from a special subcommittee appointed to consider and report upon the constitution, powers, duties, and finance of the Committee, and recommendations were adopted that the interests of the personnel of the Local Medical and Panel Committees for the County of London should be identical; that until it is possible to secure that the personnel of the two committees is identical the Local Medical Committee should offer advice on matters connected with the administration of the benefits of insured persons only when that advice is sought; that the Local Medical Committee should exercise their powers and duties in the closest coöperation with the Panel Committee; and that an executive committee be appointed to consider and report from time to time as may be required upon all matters referred to the Local Medical Committee. The executive committee appointed will consist of Dr. James Galloway (chairman), Dr. B. A. Richmond (secretary), together with Dr. J. A. Butler, Dr. H. J. Cardale, Mr. J. V. C. Denning, Dr. Mina Dobbie, Mr. W. McAdam Eccles, Dr. M. Greenwood, Dr. W. Kingdon, Dr. J. T. Richards, Mr. J. J. Scanlan, and Dr. A. G. Southcombe. With regard to the proposed federation of Local Medical and Panel Committees, it was resolved that the Committee were unable to accept membership of the federation under its constitution as at present drafted.

DUPLICATION IN INDEX REGISTERS.—At a recent meeting the Sheffield Insurance Committee was informed that the difference between the number of insured persons shown on the index registers of the societies for Sheffield and the number estimated by the Commissioners as being insured there was 24,000, the figures in the former case being 172,000 and in the latter 148,000. It was pointed out that this might mean a considerable shortage in the money to be applied to the payment of medical benefit. The Commissioners had intimated that the number shown by the index registers throughout the country was greatly in excess of the number of persons insured, and that they were only prepared to pay upon the number insured. Members of the Sheffield committee strongly protested against deduction being made from the sum claimed by Sheffield upon any principle involving the taking of an average throughout the country, on the ground that records in Sheffield were carefully kept and checked, and that the committee was not prepared to suffer for inaccuracies allowed by other committees. It was decided that the finance and panel committees should confer on the subject.

PROPOSAL TO MAKE TUBERCULOSIS THE CARE OF THE STATE.—At the National Conference of Friendly Societies concluded recently at Norwich a proposal of the executive committee was discussed, and a resolution in its favour carried, to the effect that sanatorium benefit should be eliminated from the Insurance Act and that the State should provide for all patients suffering from tuberculosis. On behalf of Scotland it was urged that the Scottish local authorities had created their machinery and would object to it being "scrapped," and it was also argued that the organisation in Wales for combating consumption was such that Wales should be excluded from the resolution. The amendments proposed were, however, lost. A resolution was also carried at the conference calling upon the Government to make a grant of half-a-crown per member per annum towards the cost of providing medical attendance and medicine for members of Friendly Societies who at the passing of the Insurance Act were prevented from becoming insured by reason of age or ill-health.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—J. A. A. Boddy (Sections I. and II.), Manchester M. M. Burt (Sections I. and II.), Birmingham; P. H. Burton (Sections I. and II.), London Hospital; W. Brown (Section I.), Oxford and King's College Hospital; C. R. Fischel (Section I.), Middlesex Hospital; and J. Stephenson (Sections I. and II.), Guy's Hospital.

Medicine.—W. Brown (Section II.), Oxford and King's College Hospital; H. H. Fairfax (Section I.), Charing Cross Hospital; C. H. Fischel (Section II.), Middlesex Hospital; N. W. Rawlings (Section I.) and G. Robinson (Sections I. and II.), Manchester; J. Stephenson (Sections I. and II.), Guy's Hospital; W. C. S. Wood (Sections I. and II.), King's College Hospital; and A. K. S. Wyborn (Section II.), Middlesex Hospital.

Forensic Medicine.—W. Andrew, King's College Hospital; C. B. Clarke, Bombay; A. J. Fradersdorff, Guy's Hospital; N. Hoffmeister, Middlesex Hospital; G. Robinson, Manchester; J. Stephenson, Guy's Hospital; and W. C. S. Wood, King's College Hospital.

Midwifery.—A. U. L. Bennet, Royal Free Hospital and Dublin; M. M. Burt, Birmingham; C. S. Dodson, Cambridge and University College Hospital; J. Stephenson, Guy's Hospital; and W. C. S. Wood, King's College Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: P. H. Burton and J. Stephenson.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The quarterly examinations of the above Board, held in Edinburgh, were concluded on Oct. 26th, with the following results:—

First Examination.—Mahmoud Abdel Kader Mofreh, William Bruce Lawson, Archibald Buchanan MacDougall, Ernest Ebenezer Bronstorph, and Hassan Amin Madwar, and two passed in Physics and three in Biology.

Second Examination.—Jackson Baird Minford, Nicholas Johannes Laubscher, Henry Morley, Robert Woodside, Frank Jones, John Lavens West, Paul Vertannes, William Ulie Desmond Longford, Clifford Pullan, and George Murray Shaw Lindsay, and three passed in Anatomy and five in Physiology.

Third Examination.—Elliot Paxton Dewar, Gulabrai Teckchand Makhijani, Yeshwant Narayan Kadam, Charles Evelyn Meryon, John Robert Beith Robb, William Graham Bowie, Maurice Andrew

White, and Alfred Edwin Illiett, and three passed in Materia Medica.

Final Examination.—Allan Beresford Hawkins, British West Indies; Florence Winifred Heyworth, Liverpool; Norman Hamilton Brewster, British West Indies; William Henry O'Grady, co. Mayo; John Ramsay Fleming, Airdrie; Gerald Christopher Stanley Perera, Ceylon; William Clarke Fraser, Dundee; Arthur Edwin James, Auckland, New Zealand; Leonard Owen Weinman, Colombo; Arthur Alexander Murison, Dumbarton; John Martin, Glasgow; Gwilym Llewelyn Pierce, Llangollen; William Smith O'Loughlin, Limerick; and Khusru Roostamji Mehta, Calcutta; and 4 passed in Medicine, 10 in Surgery, 12 in Midwifery, and 11 in Medical Jurisprudence. (These candidates received their diplomas.)

UNIVERSITY OF GLASGOW.—In the Third Professional Examination (Old or New Ordinance) and Fourth Professional Examination (New Ordinance) the following have passed in the subjects indicated (P., Pathology; M., Medical Jurisprudence and Public Health):—

William Dick Allan (P.), William Baird (P.), Joseph Edward Bannen (P.), Thomas Blackwood (P.), Archibald Campbell Brown (P.), Henry Drummond Brown (P.), John Alexander Buchanan (P.), Stuart Ernest Armstrong Buckley (P.), Duncan Cameron (P.), David Campbell, M.A., B.Sc. (P.), Dugald Stewart Campbell (M.), William Campbell (P., M.), Moses Wolffe Cantor, B.Sc. (P., M.), Joseph Chalmers (P.), David Clyde (P.), William Kerr Connell (P.), Alexander Findlay Cook (P.), Archibald Shankland Cook (P.), Walter Gow Cook (P.), John Norman Cruickshank (P.), John Freeland Cunningham, M.A. (M.), Robert Cunningham (P.), Alexander Dick (M.), Ronald Stevenson Dickie (P., M.), William Donald (M.), Samuel Norman Dykes (P.), Lewis Livingstone Fotheringham (P.), Matthew Mair Frew (P.), David Gould Gardiner (M.), Robert Stuart Gibson, B.Sc. (M.), Norman William Gilchrist (M.), Samuel John Henderson (P.), William Yuill Jamieson (P., M.), Stewart Johnstone (P.), George Kirkhope (P.), John Crawford Knox, B.Sc. (M.), Robert Kyle (P., M), James Alexander Leiper (P.), Robert Lindsay, M.A. (P.), Hugh Lawrence M'Cormick (P., M.), Donald Kerr MacDougall (P.), David M'Farlane (M.), James Wallace Macfarlane (P.), John Mandeville Macfie (M.), John MacInnes (P.), James Murdoch MacKay (P.), Keith Stuart Macky (P.), Alexander Fisher M'Millan (P.), David M'Neill (P., M.), Eric John MacPhail (P.), Noah Morris, B.Sc. (P., M.), Alexander Morton (P.), John Hughes Murray (M.), William O'Brien (P.), Arthur William Panton (P.), Thomas Smith Paterson (M.), James Herbert Paul, M.A., B.Sc. (P., M.), William James Poole (M.), William Burns Primrose (M.), John King Rennie B.Sc. (M.), James Richardson (P.), Robert Rodger (P.), George William Ronaldson (P.), Alexander Forbes Ross (P.), Kenneth M'Alpin Ross (P.), Angus M'Alpine Scott (P.), William Frederick Shanks (M.), James Steel (P.), John Steele (P.), Abraham Raphael Steinberg (P.), William Mitchell Stewart (P.), John Stirling, B.Sc. (M.), George Carson Swanson (P.), Robert Taylor (P.), Herbert Watt Torrance (P.), John Dalglish Watson (P., M.), William James Cunningham Watt (P.), and Robert James Wilson (P., M.).

Women.—Christina Blair Buchanan (P.), Maud Christine Cairney (P.), Ann Kelly Cormack (M.), Winifred Jane Crawford (P.), Jane Beattie Davidson (P.), Jessie Crawford Gilchrist (P.), Jean Lawrie Hamilton (P.), Janet Fraser Henderson (M.), Helen Isobel Winifred Kerr (P.), Dorothy M'Cubbin (P., M.), Mary Ann MacLennan MacLean (P.), Effie Cowan M'Vie (P., M.), Elizabeth Stewart Martin (P.), Margaret Kay Mitchell (P.), Janey Lamond Munro (M.), Helen Young Murdoch, M.A. (P.), Mary Helen Routledge (P.), Mary Scott (P.), Mary Isabel Sinclair (M.), Jane Stalker (P.), Alison Edgar Wilson (P.), and Marion Baillie Darling Wilson (P.).

Dr. Richard Whittington was on Oct. 24th elected a member of the Brighton town council.

A MEDICAL LORD MAYOR.—Dr. J. G. Gordon-Munn has been selected as the new Lord Mayor of Norwich for the coming year.

UNIVERSITY OF CAMBRIDGE.—The Special Board for Medicine have elected Professor Howard Marsh, Master of Downing College, as their representative upon the General Board of Studies in the University. Mr. W. B. Hardy, F.R.S., tutor of Gonville and Caius College, has been appointed a manager of the Gerstenberg studentship in moral philosophy and metaphysics, in place of the late Dr. W. H. Gaskell. Mr. J. E. Purvis, St. John's College, has been re-appointed University lecturer in chemistry and physics in their application to hygiene and preventive medicine.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADDISON, KATE, M.B., B.S. Lond., has been appointed Clinical Assistant in the Skin Department at the Royal Free Hospital.

BARNES, H. W., M.B. Cantab., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Acting Medical Officer of Health and School Medical Officer for Luton.

BLAIR, Miss A., M.B., B.S., has been appointed Senior Clinical Assistant in the Gynæcological Department at the Royal Free Hospital.

BLAKEWAY, H., F.R.C.S. Eng., M.S. Lond., has been appointed Acting Assistant Surgeon to the Royal Free Hospital.

GARDINER, HAROLD, M.B., B.S. Lond., F.R.C.S., has been appointed Acting Assistant Surgeon to the Royal Free Hospital.

GARSTANG, W., M.B., Ch.B. Vict., has been appointed Medical Officer of Health to the Hucknall Urban District Council.

LLOYD, MURIEL, M.B., B.S. Lond., has been appointed Resident House Physician at the Royal Free Hospital.

MACPHERSON, LOUIS, M.D. Edin., has been appointed Tuberculosis Officer for the Counties of Mid- and West Lothian and Peebles-shire.

MCCORMICK, J., M.B., B.Ch. N.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Bancrana District of the county of Donegal.

MOON, G. B., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Second Assistant Medical Officer at the Surrey County Asylum Netherne.

O'REILLY, E., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Ballyhaise District of the county of Cavan.

PATERSON, Miss M. R., M.R.C.S., L.R.C.P., has been appointed Resident House Physician at the Royal Free Hospital.

PILLMAN, Miss M. E. C., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at the Royal Free Hospital.

POWELL, Miss E. M., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at the Royal Free Hospital.

SALISBURY, WALTER, M.B., B.S. Lond., has been appointed Resident Medical Officer at Queen Charlotte's Lying-in Hospital.

SMITH, W. MAULE, M.D. Edin., M.R.C.P. Edin., has been appointed Medical Superintendent to the West Bromwich and Walsall Joint Unions.

STUART, J., L.A.H. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Belturbet District of the county of Cavan.

VINTER, C. H. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Framlingham District of the county of Suffolk.

WALSH, HAROLD V., M.B., B.Ch. Belf., has been appointed Assistant Resident Medical Officer at Queen Charlotte's Lying-in Hospital.

WEST, T. RUDDOCK, M.B., B.S. R.U.I., has been appointed Assistant School Medical Officer and Assistant Medical Officer of Health of Norwich.

WHITNEY, CYRIL U., L.R.C.P. Lond., M.R.C.S., has been appointed Deputy Medical Officer of Health of Maldon, Essex.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHNAL GREEN INFIRMARY, Cambridge-road, N.E.—Two Assistant Medical Officers. Salary at rate of £200 per annum, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRMINGHAM CORPORATION.—Female Medical Officer for Infant Consultation Work. Salary £300 per annum.

BIRMINGHAM GENERAL HOSPITAL.—House Governor and Secretary. Salary £500 per annum.

BIRMINGHAM UNION.—DUDLEY-ROAD INFIRMARY: Third Assistant Medical Officer and Fourth Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively. ERDINGTON INFIRMARY AND COTTAGE HOMES: Assistant Medical Officer. Salary at rate of £200 per annum. SELLY OAK INFIRMARY: Assistant Medical Officer. Salary at rate of £180 per annum. Apartments, rations, laundry, and attendance in each case.

BOLTON INFIRMARY AND DISPENSARY.—Second House Surgeon. Salary £120 per annum, with apartments, board, and attendance.

BOOTLE, CORPORATION HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer, unmarried. Salary £250 per annum, with board, washing, and apartments.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon, unmarried, for six months. Salary £100 per annum, with board, lodging and washing.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRENTWOOD ASYLUM, Brentwood, Essex.—Locum Tenens Assistant Medical Officer. Salary £5 5s. per week, with board, attendance, lodging, and washing.

BRISTOL CITY ASYLUM, Fishponds.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

BROMSGROVE, WORCESTERSHIRE ASYLUM.—Deputy Medical Superintendent and Second Assistant Medical Officer. Salary £300 and £225 per annum respectively, with apartments, board, washing, and attendance.

BUBBLEM, HAYWOOD HOSPITAL.—Female Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

CANTERBURY MENTAL HOSPITAL.—Assistant Medical Officer. Salary £250 per annum, with board, lodging, laundry, &c.

CARSHALTON, SURREY, QUEEN MARY'S HOSPITAL FOR CHILDREN.—Assistant Medical Officers. Salary at rate of £250 per annum, with board, lodging, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon for six months. Salary £80 per annum.

CHESHIRE EDUCATION COMMITTEE.—Fourth Assistant to the Chief School Medical Officer. Salary £350 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

CITY OF WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

COUNTY OF LONDON.—Lecturers in First Aid, Home Nursing, Health, and Infant Care. Salary £1 1s. a lecture.

DERBY, DERBYSHIRE COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £400 per annum.

DOUGLAS, ISLE OF MAN, NOBLE'S HOSPITAL.—Resident House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

EXETER CITY ASYLUM.—Medical Superintendent. Salary £500 per annum, with unfurnished house, coal, lighting, laundry, &c.

GLASGOW UNIVERSITY.—Examiners.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

HARROW-ON-THE-HILL URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary at rate of £200 per annum.

HUDDERSFIELD ROYAL INFIRMARY.—Senior and Junior Assistant House Surgeons. Salary £80 per annum each, with board, rooms, and washing.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

IPSWICH, EAST SUFFOLK HOSPITAL.—Resident House Physician.

KILMARNOCK INFIRMARY.—Female House Surgeon. Salary £80 per annum, with board, &c.

KING'S LYNN, LYNN AND WEST NORFOLK HOSPITAL.—House Surgeon. Salary £150 per annum.

LEICESTER, LEICESTERSHIRE EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

LIVERPOOL, BROWNLOW HILL INSTITUTION.—Resident Assistant Medical Officer. Salary £140 per annum, with apartments.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

MACCLESFIELD, PARKSIDE ASYLUM.—Medical Superintendent. Salary £650 per annum.

MAIDSTONE, KENT COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £220 per annum, with board, quarters, attendance, washing, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER POOR-LAW INSTITUTION, Crumpsall.—Second Resident Assistant Medical Officer and Junior Resident Assistant Medical Officer, both unmarried. Salary £180 and £160 per annum respectively, with rations, apartments, fire, light, washing, and attendance.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

NEWCASTLE, Co. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Assistant Resident Medical Officer. Salary at rate of £200 per annum, with board and residence. Also Laboratory Assistant. Salary £1 per week and cottage.

NEWCASTLE-UPON-TYNE, HOSPITAL FOR SICK CHILDREN.—Senior Medical Officer. Also Junior Medical Officer. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

NEWCASTLE-UPON-TYNE AND NORTHUMBERLAND SANATORIUM FOR CONSUMPTIVES, Barrasford, North Tyne.—Resident Medical Officer, unmarried. Salary £350 per annum, with board, residence, and laundry.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—Two House Surgeons. Salary £120 per annum, with apartments, board, washing, attendance, &c.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Surgeon for six months. Salary at rate of £130 per annum, with apartments, board, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £100 per annum, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

OLDHAM ROYAL INFIRMARY.—Third House Surgeon for six months. Salary at rate of £100 per annum, with board and residence.

PRESTON, COUNTY ASYLUM, Whittingham.—Junior Assistant Medical Officer, also Assistant Medical Officer to also act as Pathologist, unmarried. Salary commencing £250 per annum, with board, apartments, &c.

PRESTON ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and laundry.

RICHMOND, SURREY, ROYAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, apartments, and washing.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £115 per annum.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—Temporary Pathologist and Bacteriologist. Salary at rate of £100 per annum.

ST. MARYLEBONE INFIRMARY, Packham-street, Notting Hill, W.—First Temporary Assistant Medical Officer, unmarried. Salary £225 per annum with apartments, rations, and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

ST. PANCRAS NORTH INFIRMARY, Dartmouth Park Hill, Highgate, N.—Senior and Junior Assistant Medical Superintendents. Salaries at rate of £175 and £140 per annum respectively, with apartments, board, and washing.

ST. PANCRAS SOUTH INFIRMARY, Pancras-road, N.W.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer of House adjacent. Salary at rate of £225 per annum, with board, apartments, and washing.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

SALISBURY (GENERAL) INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Anæsthetist. Salary £15 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board and residence.

SHEFFIELD ROYAL INFIRMARY.—Two House Surgeons and Assistant House Physician for six months. Salary £100 per annum each, with board and residence.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich Grove, S.E.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively, with board, lodging, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon, unmarried. Salary at rate of £120 per annum, with board, residence, and washing.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

UNIVERSITY OF LONDON.—University Chair of Anatomy. Salary £600 per annum.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £230 per annum, with apartments, board, washing, and attendance. Also Female Assistant Medical Officer. Salary £235 per annum. Also Locum Tenens Assistant Medical Officer. Apartments, board, travelling expenses. Salary as arranged.

WALSALL, COUNTY BOROUGH OF.—School Medical Inspector and Assistant Medical Officer of Health. Salary £300 per annum.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon and Junior House Surgeon and Anæsthetist. Salary £150 and £110 per annum respectively, with board, residence, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

WESTMINSTER HOSPITAL, S.W.—Ophthalmic Surgeon.

WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Meathop, Grange-over-Sands.—Assistant Medical Officer. Salary £200 per annum, with apartments, board, and laundry.

WORCESTER COUNTY AND CITY ASYLUM, Powick, near Worcester.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Battersea, in the county of London.

Births, Marriages, and Deaths.

BIRTHS.

FINIGAN.—On Oct. 18th, at The Bridge House, Fordingbridge, the wife of Captain D. O'C. Finigan, M.D., of a daughter.

SHIPWAY.—On Oct. 25th, at 61, Queen Anne-street, W., the wife of Francis E. Shipway, M.A., M.D. Cantab., of a daughter.

MARRIAGES.

CAPON—SEELY.—On Oct. 24th, by special licence, at St. John's Church, Paddington, by the Rev. Canon Lillingston, M.A., Herbert Vawdrey Capon, 2nd East Anglian Brigade, R.F.A., only son of Dr. and Mrs. H. J. Capon, of 40, Upper George-street, W., to Ruby, daughter of the late Mr. Alfred Seely and Mrs. Seely, The Gables, Gressenhall, Norfolk.

COCKCROFT—PEACOCK.—On Oct. 28th, at St. Mary's and St. Alkelda's Church, Middleham, by the Rev. H. G. Topham, M.A., George, second son of the late William Cockcroft, Solicitor, Rochdale, and Mrs Cockcroft, Middleham, to Mary, second daughter of M. D. Peacock, Manor House, Middleham. At Home, Dec. 2nd and 3rd.

COLLINS—MERRICK.—On Oct. 21st, at St. Mary's, Barnes, Algernon Boniface Collins, M.R.C.S., L.R.C.P., to Marie Adèle, eldest daughter of Mr. and Mrs. William Gordon Merrick, of Barnes, S.W.

DEATHS.

SHINE.—On Oct. 22nd, at Galtee More, Barnsley, John Power Shine, M.B., Ch.B. R.U.I., aged 45.

SIMPSON.—On Oct. 22nd, at Horton-crescent, Rugby, James Herbert Simpson, M.D., aged 64.

SMITH.—On Oct. 23rd, Eliza Jane, the loved wife of John Percival Smith, L.R.C.P., at 370, London-road, South Lowestoft.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

HEALTH AND SANITATION IN THE BAHAMAS.

ACCORDING to the Blue-book of the Bahamas, just received at the Colonial Office, the estimated population of the islands on Jan. 1st, 1914, was 55,766. The births in 1913 numbered 1907, as against 1824 in 1912. The deaths were 1433, as against 1498 in 1912. The birth-rate was 34 per 1000, and the death-rate 25·6 per 1000. Whooping-cough was epidemic during the year over the whole colony. There were 30 cases of typhoid fever, of which 8 died. The mean temperature for the year was 78·1, and the rainfall 39·96 inches. As regards water-supply, the commonest source is wells. From an analysis which has been made at the Imperial Institute it appears that the water is hard, contains large proportions of chlorine, and is in most instances polluted. The other source of supply is rain water stored in tanks, tubs, and underground cisterns. The services of a noted expert, Mr. H. H. Humphreys, were obtained with the view of demonstrating whether a supply of fresh water sufficient for the needs of the city and suburbs of Nassau could be obtained by boring or otherwise, and his report is to be laid before the House of Assembly.

The Bahamas General Hospital was established in 1809 as a poorhouse and hospital for the poor and infirm of the island. Since then the institution has grown steadily, and its functions have been extended in many directions. In 1845 it was placed under a Board of Commissioners appointed by the Governor, and now comprises the hospital proper, the infirmary, dispensary, the lunatic asylum, and the leper compound. The feasibility of forming a leper colony on one of the small islands is under consideration. This is necessary if the Lepers Act, 1913, which provides for compulsory segregation in certain cases, is to be made operable. As a winter health and pleasure resort Nassau (the capital) has for many years past attracted a considerable number of American and Canadian visitors. It is estimated that during the year about 2600 tourists arrived, in addition to 1231 visitors from pleasure steamers staying a few hours on their way north or south.

A MEDICAL FAMILY.

To the Editor of THE LANCET.

SIR,—The death of Mr. Alfred Pern, F.R.C.S., on Oct. 12th, at Botley, Hants, briefly noted in THE LANCET of Oct. 17th, p. 975, recalls a noteworthy fact. He was the father of a large family, among whom were no fewer than seven sons, all educated at Marlborough College and possessing the same medical qualifications (Conjoint M.R.C.S., L.R.C.P.) all being at present in practice, four in England and three in Australia. I venture to think this must be a record.

I am, Sir, yours faithfully,

London, Oct. 28th, 1914. SEPTEM.

CENTIGRADE AND FAHRENHEIT.

To the Editor of THE LANCET.

SIR,—As I observe that your readers are interested in methods of converting degrees Centigrade into degrees Fahrenheit, you might like to publish the following original mechanical method of making rough thermometer scales. Take a piece of plain paper, not too thick, and measure off a length of seven inches. Fold it four times in half successively and neatly. The paper will have 15 creases. Starting from the bottom crease number the first crease 8, the next 16, the next 24, the next 32, and so on, up to 120 at the top crease. This paper will now act as a Fahrenheit scale, the 32 crease being the freezing point, at which lay the end of a foot-rule or inch measure, and mark on the paper 0 Centigrade opposite the 32 Fahrenheit; then one inch up the rule mark 10° C., at two inches up mark 20° C., and so on. Of course each half inch up will be 5° C. extra, and thus two and a half inches will be 25° C., and if the rule should be divided into tenths of an inch all the degrees can be marked off on the paper easily. As regards the Fahrenheit scale, it is obvious that each crease marking off 8° it can easily be further halved into 4°, and again into 2°, and thus completed in detail if required. For a rough and ready method it will be found very close to accuracy. All that is required is a piece of paper and an inch measure.

I am, Sir, yours faithfully,

London, Oct. 23rd, 1914. F.

THE Buxton council have resolved "that all officers, soldiers, and sailors of the Allied Forces invalided to Buxton be granted the Buxton mineral water treatment free of cost, such treatment to be prescribed by a medical practitioner." It is hoped that this offer will be extensively taken advantage of, as the waters of Buxton, combined with the dry bracing air, should be of particular value in cases of rheumatism contracted by our army and allies whilst in the trenches.

Dr. D. Barty King will give a lecture, illustrated by the epidiascope, on "Germany in War Time," with an account of his experiences amongst the German wounded, to the nurses of the Tuberculosis School of the Royal Hospital for Diseases of the Chest, City-road, on Nov. 3rd.

THE Thermogene Company, Limited, desire to make it known that Thermogene was invented by a Belgian chemist, Charles Vandenbroeck, of Brussels, from whom it was acquired by the present British proprietors. It is entirely British owned and made by British labour at the company's factories at Haywards Heath, Sussex.

WE are asked to state that the War Office has accepted a gift of 500 gallons of Acrosyl to be distributed amongst the military hospitals in the United Kingdom. Acrosyl is a saponified cresylic disinfectant containing 50 per cent. of specially treated cresols.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Hon. R. J. Strutt: Luminous Vapours Distilled from the Air, with Applications to the Study of Spectrum Series and their Origin. II.—Prof. J. N. Collie, Mr. H. S. Patterson, and Mr. I. Masson: The Production of Neon and Helium by the Electrical Discharge.—Prof. C. H. Lees: On the Flow of Viscous Fluids through Smooth Circular Pipes.—Mr. P. O. Rice: Quantitative Measurements of the Absorption of Light. I. The Molecular Extinctions of the Saturated Aliphatic Ketones (communicated by Prof. E. C. C. Baly).—Prof. W. M. Thornton: The Ignition of Gases by Condenser Discharge Sparks (communicated by Sir Charles Parsons).—Mr. E. G. Bilham: The Spark Spectrum of Nickel under Moderate Pressures (communicated by Mr. A. Fowler).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

WEDNESDAY.

SECTION OF OPHTHALMOLOGY (Hon. Secretaries—Leslie Paton, Elmore W. Brewerton): at 8 P.M.

Cases:

Mr. A. Hugh Thompson: (1) Complete Loss of Pupillary Light Reflex in One Eye with Retention of Contraction to Convergence; (2) Persistent One-sided Loss of Pupillary Reflex in a Healthy Adult.

Mr. Bishop Harman: (1) Congenital Entropion; (2) Notes of a Case of High Myopia in an Infant.

Papers:

Mr. Holmes Spicer: Bubbles in the Anterior Chamber.

Mr. H. B. Grimsdale: The Necessity of a Definition of Blindness.

FRIDAY.

SECTION OF LARYNGOLOGY (Hon. Secretaries—Cecil I. Graham, W. D. Harmer): at 4 P.M.

Cases and Specimens:

Will be exhibited by Dr. Hill, Dr. Lambert Lack, Dr. Dan McKenzie, Mr. Herbert Tilley, Dr. Coubro Potter, Dr. Irwin Moore, Dr. Jobson Horne, &c.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Society's Rooms, West London Hospital, Hammersmith-road, W.

FRIDAY.—8 P.M., Special Clinical Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Bradshaw Lecture:—Dr. N. Tirard: Some Clinical Contributions to the Study of Glycosuria.

THURSDAY.—5 P.M., Dr. C. A. Mercier: Leper Houses and Mediæval Hospitals.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

MONDAY.—5 P.M., Mr. S. G. Shattock: Specimens illustrating Repair.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. B. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. J. B. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Nose, Throat, and Ear (Mr. H. D. Gillies). X Rays and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 4.30 P.M., Special Demonstration of Selected Skin Cases. 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. B. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

CHARING CROSS HOSPITAL, Chandos-street, Charing Cross, W.C.

MONDAY.—3 P.M., Huxley Memorial Lecture on Recent Advances in Science in Relation to Medicine and Surgery:—Sir Ronald Ross: Malaria and the Transmission of Diseases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Lecture:—Mr. L. Paton: Clinical Cases.
FRIDAY.—3.30 P.M., Lecture:—Mr. L. Paton: Clinical Cases.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Sebaceous Dermatitis.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill street.—4.30 P.M., Dr. A. Renshaw: Collection of Pathological Material for Examination.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Abnormal Presentations (continued). 11 A.M., Examination of Patients and Minor Operations.
TUESDAY.—10 A.M., Major Operations.
WEDNESDAY.—10 A.M., Obstetrical Lecture: Asphyxia Neonatorum. 11 A.M., Examination of Patients and Minor Operations.
THURSDAY.—10 A.M., Major Operations.
FRIDAY.—10 A.M., Gynæcological Lecture: Genital Prolapse. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 28th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 22	29·680	S.	0·17	80	58	48	51	53	Raining
,, 23	29·724	S.	0·08	70	59	53	53	54	Overcast
,, 24	29·796	S.	...	91	61	52	53	53	Overcast
,, 25	29·960	S.	0·27	69	60	53	54	53	Cloudy
,, 26	29·852	W.	0·06	95	61	52	51	53	Fine
,, 27	29·740	S.	...	93	58	47	51	51	Overcast
,, 28	29·670	S.W.	...	72	53	40	41	42	Fine

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